7 REAL ESTATE PLAN

INTRODUCTION

This chapter presents real estate information as it relates to the various options considered in this study. It is composed of the following items:

1. A full Real Estate Plan (REP) for the Pelican Lake Outlet.

2. Real estate information for the Likely Future Without Project.

Information is provided for all 16 features analyzed; however, full REP's are provided for the levees at the cities of Devils Lake (Feature 2) and Minnewaukan (Feature 4). These two features are the only features for which the Corps of Engineers has been identified as the lead Federal agency.

3. A full REP for the Expanded Infrastructure Protection (Roads Acting as Dams).

PELICAN LAKE OUTLET

General Description

This Real Estate Plan (REP) is part of the Integrated Planning Report and Environmental Impact Statement (EIS) for the Devils Lake Project. It is based on the outlet alternative that has been identified as the best of those evaluated; i.e., a 300-cfs constrained flow outlet from Pelican Lake to the Sheyenne River. If a different outlet alternative is approved, a new REP will be prepared, if required.

Devils Lake is located in northeastern North Dakota, approximately 90 miles west of Grand Forks, North Dakota. Since 1993, the lake level has risen more than 25 feet and has caused more than $350 million in damages to homes, businesses and roads. As of December 2002, Devils Lake was at elevation 1446.7 feet above sea level. The natural outlet of Devils Lake is into the Sheyenne River near Tolna Coulee southeast of Devils Lake. The lake would need to rise about another 12 feet to reach the natural outlet elevation.

The rising lake levels have already caused the initiation of emergency measures. The most notable effort has been the construction of levees to protect the city of Devils Lake, which is located on the north side of the lake. Many improved properties threatened with flooding were purchased using FEMA funds. Almost all the residences and businesses in the town of Churchs Ferry, North Dakota, were purchased. Work is being done to raise highways and roads so they can remain passable.

Project Authorization

In the Energy and Water Development Appropriations Acts of 1998, 1999, 2000, and 2001, Congress provided funds for construction of an emergency outlet from Devils Lake to the Sheyenne River, but it imposed several conditions to the funds becoming available. These construction funds have not been provided to the Corps of Engineers. Funds to conduct the required studies were provided in the Emergency Supplemental Appropriations Act of 1997, and additional funds for this work were provided in subsequent laws, including the Emergency Supplemental Act, 2000 (Public Law 106-246).

Project Description

The purpose of the project is to reduce the flood damages related to the rising lake levels in the flood-prone areas around Devils Lake and to reduce the potential for a natural overflow event. The Integrated Planning Report/EIS examines the future without-project conditions and the effectiveness and impacts of the following alternatives:

1. Likely future without project.
2. Upper basin management measures.
3. Expanded infrastructure measures.
4. Various outlet alternatives.

The selected outlet alternative is the Pelican Lake outlet. The outlet would be constructed to a maximum capacity of 300 cfs and would be operated for 7 months from May through November constrained by Sheyenne River channel capacity and the 300-mg/l sulfate standard. Approximately 30 owners are within the outlet boundary with a total of 858 acres, more or less, for this segment of the project.

This outlet plan preliminarily consists of the following components:

- An open channel approximately 6.1 miles long from Pelican Lake to the north side of Minnewaukan, North Dakota (west side of Devils Lake).
- A pump station located on the north side of Minnewaukan to convey water through the pressure pipeline segments.
- Three 48-inch-diameter pipes from the pump station laid approximately 3.3 miles to the south-southwest.
- A single 84-inch reinforced concrete pressure pipe approximately 4.2 miles long from the above pipeline to the divide between the Devils Lake basin and the Sheyenne River basin.
- A reservoir to transition from pressure pipeline to gravity pipeline flows and to provide discharge control for the outlet to the Sheyenne River and a sand filter to address biota transfer.
- Approximately 7 miles of reinforced concrete pressure pipe, generally following the alignment of Peterson Coulee, discharging into the Sheyenne River.

Associated features of the outlet include:

- Channelization between Dry Lake and Big Coulee (Mauvais Coulee) through Chain of Lakes.
- Mitigation interests along the upper and lower Sheyenne River.
- Flowage easements along the upper Sheyenne River.
- Small gaging stations upstream and downstream of the outlet pipe on the Sheyenne River and monitoring stations on the Sheyenne and Red Rivers.

The distance between an inlet on Pelican Lake to an outlet on the Sheyenne River is a little over 20 miles. The water must be transported south across the flat Devils Lake basin and then up and over the divide to the Sheyenne River. The plan consists of three segments: segment 1, extending generally from Pelican Lake across West Bay; segment 2, extending generally from West Bay across the Devils Lake drainage basin divide to the Sheyenne drainage basin; and segment 3, extending from the divide to the Sheyenne River.

The first segment is a 6.1-mile-long open channel from Pelican Lake to a pump station located on the north side of Minnewaukan. The channel would run from Pelican Lake through low ground and then cross under Highway 281. It then would follow Highway 281 to the north side of Minnewaukan. Much of this alignment is currently under water. At current Devils Lake water levels, the Pelican Lake area is considered as essentially just another bay of Devils Lake.

From the end of the channel on the north side of Minnewaukan, water would be pumped through a 15-mile-long pipeline to the Sheyenne River. This pipeline would be buried to frost depth for most of its length. The pipeline would be sited to avoid cemeteries; homesteads; and significant cultural, historical, or HTRW sites. A storage and discharge reservoir would be used to control project discharges into the Sheyenne River. This reservoir would connect segments 2 and 3 and would be located south of Stony Lake. The reservoir size is assumed to be approximately 300 feet by 300 feet, consisting of a lined reservoir with a perimeter embankment and a sand filter.

An auxiliary municipal water well, water lines, and sewer lines in Minnewaukan would need to be relocated because of impacts from the pump station and open channel.

The Dry Lake Diversion segment would allow more fresh water to flow from Big Coulee into Pelican Lake if the historical drainage route from Dry Lake to Big Coulee were restored. Drainage from Dry Lake was diverted directly to Devils Lake through Channel A in 1979. A control structure could be built at the head of Channel A and a new channel would be constructed west of Dry Lake to Mikes Lake, and then through the Chain of Lakes to Big Coulee. This new channel is approximately 1.5 miles long, through farmland. The design study selected a 400-cfs flow for the diversion. The operational assumption is that Channel A would be diverted to Big Coulee unless the combined flows exceed 2,000 cfs, when excess flow would be allowed to flow directly through Channel A

to Devils Lake. Channel improvements to existing channels in the remaining lakes of the Chain of Lakes would also be undertaken, along with roadway crossing improvements and control structure improvements in the Chain of Lakes. These measures would allow the water from Dry Lake to travel through Mikes Lake, then Chain Lake, then Lake Alice, to Lake Irvine and from there down Big Coulee to Pelican Lake. Flowage easements would be acquired at Dry Lake, Mikes Lake, and Chain Lake. Parts of Lake Irvine and Chain Lake and all of Lake Alice are within the boundaries of the Lake Alice (Lac Aux Mortes) National Wildlife Refuge. Some of Big Coulee is within the Silver Lake National Wildlife Refuge. The outflow from Lake Irvine is now controlled by a road crossing located immediately south of the lake (and currently underwater) and the capacity of Big Coulee. This segment of the project is still in the early design phase; however, a Gross Appraisal and this REP were developed from the information available.

Flowage easements, mitigation areas, and channel improvement areas were identified for the Sheyenne River. Flowage easements cover the area where water is out of bank at a 600-cfs flow.

Upper basin storage, consisting of storing water in depressions in the upper basin of Devils Lake, was investigated. One method of storing this water would be to remove existing drainage from agricultural lands. This feature would result in the conversion of agricultural lands to intermittent or permanent wetland storage sites. Water storage would have significant effects on current land uses, with loss of agricultural lands and benefits to wetland and wildlife resources. Based on the stochastic analysis, upper basin storage is not economically justified and is not included as a feature of the outlet plan.

Continued infrastructure protection would result in protection of the major features in the basin such as the city of Devils Lake and other communities, important facilities, and major roads. The construction of infrastructure features would result in the disruption of social services, transportation systems, and loss of features that are not protected. From an economic standpoint, infrastructure protection is a wise investment of funds because it is constructed incrementally as needed.

Sponsor-Owned Lands, Easements, Rights-of-Way (LER)

The sponsor for the outlet project is the North Dakota State Water Commission (NDSWC), an agency of the State of North Dakota. Most sponsor-owned LER is contained within State road rights-of-way. In accordance with the Uniform Appraisal Standards for Federal Land Acquisitions, this LER would be assigned a value of $0 and credit given accordingly. The State of North Dakota also owns a quarter section along the Peterson Coulee route and some lands along the Sheyenne River. The majority of the LER needed for the project is not sponsor owned.

Estates

It is anticipated that the following standard estates would be used for the outlet part of this project: fee, pipeline easement, channel improvement easement, and temporary work

area easement. Non-standard estates for gaging station and for permanent flowage and groundwater easements are suggested for the gaging stations and the overflow areas along the Sheyenne River. Channel improvement easement is suggested for the channel from Pelican Lake to the pump station and at the outlet of the pipeline into the Sheyenne River; pipeline easement for the pipeline corridor from the pump station to the Sheyenne River; and fee for the pump station site and the reservoir site. It is anticipated that 534 acres would be acquired for pipeline easements in the outlet segment. Channel improvement easements for this segment are approximately 284 acres, which includes 0.2 acre at the pipeline outlet in the Sheyenne River. There are 40 acres of fee which have been identified for the pump station and the reservoir sites. Temporary work area easement areas have not yet been identified. It is expected that temporary work areas can be accommodated within the identified right-of-way because of the generous width of the corridors. Borrow areas have not been identified; because the project primarily involves excavation and borrow needs are expected to be minimal, the needs can probably be met with excess excavated material. Staging areas are expected to be within the identified right-of-way corridors. Copies of the proposed estates are included in Figure 7-1.

A total of 284 acres necessary for channel improvement easements were identified (approximately 283.8 acres at Devils Lake and 0.2 acres at the pipeline outlet in the Sheyenne River). A portion of the approximately 283.8 acres which will eventually be needed for channel improvement easement in/near Devils Lake is presently under water. As the Federal Government owns the bed of Devils Lake, State law and Federal case law dictate that no channel improvement easement purchases would presently be required for those portions of proposed channel currently lying below the ordinary high water mark (OHWM). However, should the ambulatory OHWM change due to natural reliction and submergence or the outlet plan's effect, it would become necessary to purchase those easements in order to modify or maintain the channel. (See discussion of the ownership of the bed of Devils Lake in the next section of this REP).

Standard channel improvement and permanent flowage easements will also be used in the Dry Lake segment of this project. Around the lakes in the Dry Lake segment, 21,600 acres of permanent flowage easement are estimated to be acquired. This acreage does not include lands needed from the National Wildlife Refuges. Permits will be obtained from the U.S. Fish and Wildlife Service to use approximately 7,000 acres of refuge lands for flowage and 8.2 acres for channel improvements. An additional 21.7 acres of channel improvement easement outside the Refuges are estimated for this project segment.

Permanent flowage easement areas have been identified on the upper Sheyenne River, based on data that the Hydraulics and Hydrology Branch provided to the Real Estate Division (Section 9 of Appendix A). Information was developed to show the geographical area covered where a 600-cfs flow is out-of-bank of the river, and a groundwater component was used to cover the possible increased groundwater levels that may be associated with the increased flows in the Sheyenne River. The Real Estate Division utilized GIS software and aerial photographs overlaid by the flooded area outline to determine where flowage easements would be needed. The acreages within the

boundaries of the flowage easements were also calculated in this manner. Mitigation areas identified by the consultant were superimposed over the flowage easement areas. A total of 1,880 acres of lands to be covered by a flowage easement are not covered by a mitigation area. The Engineering Division has been refining the data for the flooded area outline and the modeling, and the flowage easement areas may be reduced when the next set of maps are produced. Because the new data were still being developed as this report was going into publication, the old outline was retained for the report. The flowage and groundwater easement is included in Figure 7-1.

Channel improvement easement would be acquired for the improvements to 10 low-head dams on the Sheyenne River, for 23 identified high-potential erosion sites, and for 53 cultural sites that would be protected from erosion. It is estimated that 44.99 acres of channel improvement easement would be needed for the erosion sites and the low-head dam protection sites. Associated with these areas, 5 acres of access road easement and 10 acres of temporary work areas have also been identified.

Mitigation areas will be acquired in fee. In the proposed plan, 5,316 affected acres are above Baldhill Dam and 716 acres are below Baldhill Dam. Some flowage easement sites were also identified as potential mitigation areas. Flowage areas and mitigation areas may overlap on approximately 4,900 acres along the upper Sheyenne River, thus these acres are not counted in the 1,880- flowage easement acres cited above.

When the sites for the relocation of the auxiliary water well and some of the water and sewer lines in Minnewaukan have been identified, estates for these areas will also be identified. It is anticipated that the level of real estate interest that the city of Minnewaukan has in these facilities will be maintained in the replacement facilities. The most likely estates for this effort are the standard fee and utility easement estates.

Any non-standard estates identified as necessary will be coordinated through CERE for approval. A non-standard estate for the gaging stations is included in Figure 7-1. Two sites on the Sheyenne River, one upstream and one downstream of Peterson Coulee, would be used for gaging stations for river flows and water quality. The currently anticipated sites for these stations are within bridge rights-of-way. It is proposed that mitigation sites also be used for some monitoring of soil salinity, mercury, sulfates, aquatic habitat, etc. Some monitoring stations will be placed on the USGS stations already on the Sheyenne River, and at the Valley City National Fish Hatchery. Permits from the USGS and the Fish and Wildlife Service would be needed. An electrical utility easement is not being obtained; the electrical company would obtain any easements needed for construction of the line to the pump station.

Existing Federal Project and Federally Owned Lands

The outlet route identified requires acquisition of approximately 121 acres of lands encumbered with Federal easements for waterfowl management. The U.S. Fish and Wildlife Service (USFWS) manages these easement areas for waterfowl production. The Service has indicated that it is willing to allow the pipeline to be placed within these

easement areas "provided precautions are taken to restore natural wetland contours." The Corps intends to recontour these areas after the pipeline has been laid. Approximately 36 acres of the 121 acres would be within the open channel alignment. Since a large portion of the open channel alignment is currently underwater, discussions with the Service on project design are currently at a conceptual stage. More concrete determinations of whether new easement areas should be furnished or current easement areas should be recontoured at project end will need to be developed when the lake levels recede.

The Dry Lake segment involves use of lands purchased in fee and in easement in the Lake Alice National Wildlife Refuge and the Silver Lake National Wildlife Refuge. Project features are being and will continue to be coordinated with the Service to determine compatibility. The Fish and Wildlife Service has indicated that they cannot provide an opinion of compatibility until they have reviewed a design and operating plan.

The increased flows from the outlet would travel down the Sheyenne River, through Lake Ashtabula, through the Sheyenne River National Grasslands, and into the Red River of the North. Lake Ashtabula is a Corps-controlled reservoir. The Sheyenne National Grasslands is a part of the National Forest System, administered by the U.S. Forest Service. One or two monitoring sites would be obtained in the Sheyenne National Grasslands. Some monitoring sites for information gathering on the effects of the increased flow down the Sheyenne River have been identified as being on USGS station sites and at the Valley City National Fish Hatchery. The fish hatchery is owned by the United States and operated by the Fish and Wildlife Service.

The Sheyenne River flows along the southern boundary of the Fort Totten Indian Reservation. Tribal trust lands are Federal lands. Land on the reservation can be of three ownership types: fee lands (private ownership), trust – individually owned Indian allotment, and trust – tribally owned.

> Easements on fee lands (privately owned) would be negotiated with the private landowners. If agreement could not be reached with the owners of fee lands, the project sponsor could proceed with condemnation. The majority of the parcels within the reservation that could be affected by the project are fee lands.
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> Easements on individually owned allotment trust land would be negotiated with the individual owners. Agreements are processed through the Bureau of Indian Affairs (BIA). If condemnation action were required, the condemnation would have to be filed in Federal District Court. Of this type of land, 7 parcels have been identified for flowage easements.
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> Easements on tribally owned trust land would be negotiated with the tribal chairman. If agreement could not be reached, Congress would need to pass legislation authorizing acquisition of these easements. One parcel of this type of land has both mitigation and flowage easement takes identified.

Because of the different procedures for acquiring easements on reservation trust lands, it is likely that the acquisition would require more time and cost more administratively than acquisition on privately owned lands.

In the matter of ownership of the bed of Devils Lake, fee title to the bed of the lake up to the ambulatory ordinary high water mark passed to the United States by Deed dated 7 July 1971 from the Garrison Diversion Conservancy District (as authorized by the North Dakota State Legislature). There has been some controversy or question as to (1) the navigability of Devils Lake (in fact, and/or as navigable waters of the United States), (2) whether the ordinary high water mark (OHWM), which was the demarcation line between submerged lands and adjoining fast lands, the title to which submerged lands passed to the State upon admission to statehood (under the Equal Footing Doctrine), was static (set at the then "meander line") or ambulatory (rising and falling over time in accordance with the doctrines of reliction and submergence, as well as accretion and erosion), (3) whether recorded changes in the levels of Devils Lake were caused by forces of reliction or avulsion, (4) whether statutory and/or common law principal of adverse possession (vis-a-vis littoral/riparian landowners vs State) together with acknowledged default of State to appear in 1920's-era quiet title actions buttressed riparian/littoral landowners ownership claims regardless of answers to issues in 1 through 3 above, and/or stopped the State (and/or its grantee, the United States) from asserting a defense/claim to ownership of some parts of presently submerged lake bed, and (5) if North Dakota Century Code, Section 47-01-15, supercedes common law and case law (and conflicting statutes) as to whether ownership of littoral/riparian owners extends to ordinary low water mark (OLWM) or OHWM. Nevertheless, all things considered, an attorney's opinion has determined, based upon a review of necessary and available fact, circumstance, statute and case law, that fee ownership of the bed of Devils Lake is presently duly vested in the United States up to the ambulatory OHWM from time to time, excepting only some apparently inchoate, concurrent right or license of littoral owners to OLWM under NDCC 47-01-15 (The Court in In re Ownership of Bed of Devils Lake, 423 N.W.2d 141 [N.D. 1988] noted, in dicta, that "...it is not entirely clear from the language of the North Dakota statute whether it grants upland owners title or only license or easement down to the OLWM..." but in any case found it unnecessary to decide inasmuch as it found the reliction and submergence doctrines to the OHWM controlling).

Navigational Servitude

Applicability of "Navigable Servitude" to Bed of Devils Lake: It is the opinion of the St. Paul District Real Estate Attorney-Advisor that Devils Lake is not subject to the so-called "navigable or navigation servitude" accruing to the United States of America under the Commerce Clause of the U.S. Constitution and/or Section 10 of the River and Harbors Act of 1899 (as amended). It is his further conclusion that the legal definition of "navigable waters of the United States" (as such term is used in the River and Harbors Act of 1899, enunciated in a long line of case law up to and including National Wildlife Federation v. Alexander, 613 F2d. 1054 [DC Cir. 1979], and adopted by most major treatises on the subject), clearly does not contemplate or encompass a wholly intrastate

body of water such as Devils Lake which does not by itself or in connection with other such bodies form an uninterrupted water highway crossing State lines. While, as the case law makes clear, Congress has the power to reach *all waters* that may be used in, or the use of which can affect, interstate commerce, the Courts have determined that Section 10 of the River and Harbors Act of 1899 (as amended) did not extend that power to all "navigable waters," rather only to such navigable water which by itself or in connection with other such bodies form an uninterrupted water highway crossing State lines. Thus, while Devils Lake was and is "navigable in fact" under definition for purposes such as determination of ownership of the bed of the lake under the Equal Footing Doctrine and for State public use purposes, it is apparently not a "navigable water of the United States" for the purposes and under the intent of Section 10 of the River and Harbors Act of 1899 (as amended).

The Sheyenne River in North Dakota is not presently recognized as a navigable water of the United States under and in accordance with Article I, Section 8, Clause 3 of the Constitution (the "Commerce Clause") and Section 10 of the Rivers and Harbors Act of 1899 (as amended). (It is considered a "water of the United States" for Clean Water Act purposes.) Indeed, the Corps of Engineers has twice (in 1931 and 1973) refused to recognize the Sheyenne River in North Dakota as navigable waters of the United States (reports prepared by St. Paul District and approved by the Chief of Engineers). Thus, no recognized "navigable servitude" is vested in the United States in connection with the Sheyenne River in North Dakota. It should be noted that both reports prepared by USACE in connection with this issue (1931 and 1973) *did not* conclude that the Sheyenne River lacked the attributes of navigable waters of the United States as required by statute, common law and case law, rather it was simply declared, in each instance, that "...there is no information currently available to substantiate a determination that the Sheyenne River is a navigable water of the United States." In other words, the issue was not decided upon a detailed analysis and/or investigation of relevant facts and data, rather it was apparently based on a determination that no historical facts or data had yet been presented that would/could confirm that the Sheyenne was imbued with the attributes/characteristics of navigable waters of the United States. It would not be surprising if a thorough study of the history of the Sheyenne River led to a conclusion that it could, after all, be deemed to be navigable waters of the United States. That being mere speculation, it should be emphasized that, presently, the Sheyenne River is not held to be navigable waters of the United States, and thus does <u>not</u> afford the United States with a navigable servitude up to the OHWM.

From the information as currently developed, it appears that the project would not cause any compensible takings of private property pursuant to the Fifth Amendment to the Constitution of the United States within the bed of the Sheyenne River. Takings of real estate are determined by examining the effect the Government action will have upon the landowner and the damages that action will cause.

Adding a maximum flow of 300 cfs to the Sheyenne River is not currently believed likely to inflict damages upon the adjoining landowners. The essential inquiry to whether a taking has occurred is whether the injury to the property is in the nature of a tortious

invasion of rights or rises to the magnitude of an appropriation of some interest in his property permanently to the use of the Government. Jackson v. United States, 230 U.S. 1. In a case involving the construction of a dam downstream of a plaintiff's property wherein plaintiff's property suffered overflows in addition to and greater than any to which he was historically vulnerable, the United States Court of Claims recognized that it is a long settled principle that a taking is determined solely by the amount of injury to the landowner, and ruled that a plaintiff must show that the damage to his land rises above a temporary, incidental injury - in the nature of a tort, if anything - before it can be deemed to be a constitutional taking requiring just compensation. See National By-Products, Inc. v. United States, 405 F.2d 1256. In Matthews v. United States, 87 Ct.Cl. 662, the court held that where the plaintiff's land was periodically flooded naturally, and the induced flooding placed no greater burden upon the plaintiff's lands than resulted from natural causes, then the only possible taking for which the United States could be held liable was held to be "problematical" and thus not compensible. The same court further stated that any action of the Government which imposes only a temporary, occasional, or incidental injury is regarded as consequential damages and does not constitute a taking.

Current information leads to the preliminary conclusion that there will be little or no deleterious impact on adjoining riparian landowners, or perhaps some incidental injury at most. One example of such damage might be the inability to move cattle across the riverbed during dry summer months. Use of aerial photographs, GIS, and landowner information from plat books did not indicate many spots where this would likely occur; however, further data gathering and analysis would be required to verify and buttress this conclusion. Such impact may be compensated through other means than purchase of a real estate interest, such as a need to provide alternative pasturage during those months or an engineered crossing. In light of the above, costs for takings within the bed of the Sheyenne River have not been developed or included in this report. Furthermore, based upon information currently available, the fact that the Sheyenne River has been deemed to be non-navigable (under the Commerce Clause and Section 10) appears to make little difference to project cost.

Map

A project map is located at Figure 5-49. Figures 4-1 and 4-4 are vicinity maps.

Induced Flooding

The outlet alternative identified may cause some induced flooding along the Sheyenne River. The selected plan involves a 300-cfs constrained flow. The channel capacity of the Sheyenne River between the outflow pipeline and Lake Ashtabula is generally 600 cfs. Below Lake Ashtabula, the channel capacity is approximately 2,000 cfs. Flows from the proposed outlet are not expected to induce flooding below Lake Ashtabula. At some areas on the upper Sheyenne River, 600 cfs would be out-of-bank. The NDSWC completed a channel capacity study in June 1997. This study identified some areas, through cross-sections, that were low. Most of these areas are old ox-bows and meander areas of the river. One area would be able to handle the 600-cfs flow if a set of culverts

were removed or replaced with larger culverts. The report concluded: "Aerial photos of the channel from Maddock to the Warwick (sic) showed that 600 cfs to 700 cfs could be contained within the channel. Downstream of Warwick, the river meanders significantly, resulting in oxbow flooding at lower flows. In this reach, there is the potential for small, isolated over-bank flow at 600 cfs, mainly in the areas of marshy low lands that are not farmland." Areas of over-bank flow at 600 cfs have been identified, and flowage easements are proposed for these areas.

The cost of easements along the upper Sheyenne River, sufficient to cover projected out-of-bank induced flooding between the outlet of the pipeline at Peterson Coulee and Lake Ashtabula, is estimated to be $3,810,000. Approximately 191 owners may be involved. These owners would include the Fort Totten Indian Reservation and the State of North Dakota. Administrative costs appear high because of the large number of owners (191), an anticipated large number of condemnations, and a higher contingency because of the uncertainties in this project. Current data and projections indicate minimal to no appreciable impacts downstream of Lake Ashtabula; thus, there is little to no discernable need for flowage easements in that section.

Baseline Cost Estimate

The baseline cost estimate is $985,000 for the Pelican Lake outlet. Dry Lake segment acquisitions are estimated to cost $2,494,000, from approximately 34 owners. Sheyenne River flowage easements are estimated to cost $3,810,000. Low head dam real estate costs are estimated at $40,000 from approximately 15 owners. The real estate component of the proposed mitigation measures is estimated to cost $3,287,000 from approximately 134 owners.

Total real estate costs for this plan are $10,616,000.00. The estimated real estate costs are as follows:

	Federal	Non-Federal	Total
Lands/damages	0	$4,016,575	$4,016,575
Contingencies		905,425	905,425
RE Admin. costs	$881,028	3,537,580	4,418,608
Contingencies (25%)	226,972	1,048,420	1,275,392
Total	1,108,000	9,508,000	10,616,000

Estimates for upper basin storage were not included in this report. Upper basin storage information is not at the point where a detailed cost estimate could be developed. Expanded infrastructure measures and the likely future without project are discussed in the next section of this report.

Public Law 91-646 Residence/Business Relocations

As currently envisioned, no residences or businesses have been identified for relocation along the outlet route. The majority of the alignment is through a rural area. Most

businesses are agricultural, and the buried pipeline would have minimal effect on them. Farmsteads would be avoided. Although the alignment goes through the city limits of Minnewaukan, it is confined to the upper outline of the city limits. This area is not highly developed.

Within the Dry Lake segment of the outlet, detailed maps indicating the extent of the flowage easements that are required have not as yet been prepared. Thus, it is not possible to state with certainty how many, if any, relocations would be necessary. The lakes are experiencing high water naturally at this time. Structures within the probable flowage easement areas on most of the lakes will have been either relocated or abandoned by their owners in response to the existing conditions. The Dry Lake Diversion Feature Development Report estimated obtaining flowage easements to elevation 1446 for most of the lakes within the project. The water levels for these lakes are currently at elevation 1447. Additional structures around Dry Lake may need relocation for the 1458 elevation flowage easement. Detailed mapping and design of this segment of the project have not been completed. At this elevation, residential or business (primarily farm business) relocations may be necessary. However, until more exact mapping is provided, it is not possible to determine how many or what type of relocations would be needed, or what protective measures might be used instead of relocation.

Flowage easements along the Sheyenne River did not appear to impact farmsteads. Proposed mitigation areas do not involve acquiring farmsteads or residences.

Mineral Activity

It is not expected that any present or anticipated mineral activity will be within the limits of the proposed project. Oil and gas fields are identified in the western reaches of the State, but they are not close to the pipeline alignment.

Sponsor Assessment

The sponsor is the NDSWC, an established agency of the State of North Dakota. NDSWC is capable of fulfilling most of the requirements of a sponsor for this project. Figure 7-2 is the sponsor assessment. The sponsor has quick-take authority. The project sponsor will not be able to condemn interests in the Sheyenne National Grasslands, the National Wildlife Refuges, and some of the Reservation lands. Assistance from the Federal Government may become necessary if an agreement with the landowners cannot be reached, or specific Congressional authority may be needed.

Zoning

It is anticipated that no application or enactment of zoning ordinances will be used for the proposed project.

Acquisition Schedule

An acquisition schedule has not been developed for this project. An advance acquisition letter will be provided to the project sponsor if initiation of advance acquisition is contemplated. Additional time to complete acquisitions along the Sheyenne river and the outlet route needs to be programmed when setting the schedule to incorporate difficult negotiations, the anticipated large number of condemnations, and to work tribal issues with the Spirit Lake Nation and the BIA.

Facility/Utility Relocations

Few facility or utility relocations have been identified within the proposed alignment. An auxiliary water well at Minnewaukan, water lines, and some sewer lines will need to be relocated. Because most of the alignment is buried pipeline, most relocations can be avoided. Also, given the rural nature of the lands, the area has fewer utilities or facilities to be impacted than in a more urban area. The constraints on water quality limit the impact on facilities downstream on the Sheyenne River. A Preliminary Attorney's Opinion concluded that the utility owners described above have a compensible interest and the project sponsor would be eligible for LERRDs credit.

Environmental Clearance

This Integrated Planning Report/EIS was prepared for the Devils Lake Study. A contractor has completed the Phase 1 HTRW report and did not identify any significant HTRW problem areas within the outlet alignment. It is not anticipated that lands with environmental or HTRW concerns will be required for acquisition.

Landowners

Some landowner resistance is expected. Higher than usual numbers of condemnations are anticipated for this project. Landowners along several of the outlet alignments that have been studied have been unwilling to sign rights-of-entry for study investigations. It is not expected that they would be more willing to sell land than they have been to allow access for studies. Groups along the affected rivers have been quite vocal in their opposition to the plan. The Spirit Lake Tribe has been willing to pay above market value to acquire land in and near the reservation from private owners. This indicates a likely unwillingness to sell fee interests, and may indicate an unwillingness to sell easement interest. High condemnation rates along the Sheyenne River were used in estimating administrative costs for land acquisition.

Miscellaneous

The contractor for the mitigation report identified 7,000 acres of potential mitigation sites. Of these, only 6,032 acres are required. Thus, some sites identified for mitigation that may not be utilized. One of these sites may be the site within the Fort Totten Indian Reservation.

ESTATES

FEE. (Standard)

The fee simple title to (the land described in Schedule A) (Tracts Nos. __, __ and __), subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

CHANNEL IMPROVEMENT EASEMENT. (Standard)

A perpetual and assignable right and easement to construct, operate, and maintain channel improvement works on, over and across (the land described in Schedule A) (Tracts Nos. __, __ and __) for the purposes as authorized by the Act of Congress approved _____, including the right to clear, cut, fell, remove and dispose of any and all timber, trees, underbrush, buildings, improvements and/or other obstructions therefrom; to excavate, dredge, cut away, and remove any or all of said land and to place thereon dredge or spoil material; and for such other purposes as may be required in connection with said work of improvement; reserving, however, to the owners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads, and pipelines.

PIPELINE EASEMENT. (Standard)

A perpetual and assignable easement and right-of-way in, on, over and across (the land described in Schedule A) (Tracts Nos. __, __ and __) for the location, construction, operation, maintenance, alteration, repair and patrol of underground pipeline; together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions and other vegetation, structures, or obstacles within the limits of the right-of-way; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

FLOWAGE EASEMENT (Permanent Flooding). (Standard)

The perpetual right, power, privilege and easement permanently to overflow, flood and submerge (the land described in Schedule A) (Tracts Nos. __, __ and __) (and to maintain mosquito control) in connection with the operation and maintenance of the project as authorized by the Act of Congress approved _____, and the continuing right to clear and remove any brush, debris and natural obstructions which, in the opinion of the representative of the United States in charge of the project, may be detrimental to the project, together with all right, title and interest in and to the timber, structures and

Figure 7-1: Estates (Sheet 1 of 4)

improvements situate on the land (excepting _____ (here identify those structures not designed for human habitation which the District Engineer determines may remain on the land)); provided that no structures for human habitation shall be constructed or maintained on the land, that no other structures shall be constructed or maintained on the land except as may be approved in writing by the representative of the United States in charge of the project, and that no excavation shall be conducted and no landfill placed on the land without such approval as to the location and method of excavation and/or placement of landfill; the above estate is taken subject to existing easements for public roads and highways, public utilities, railroads and pipelines; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used and enjoyed without interfering with the use of the project for the purposes authorized by Congress or abridging the rights and easement hereby acquired; provided further that any use of the land shall be subject to Federal and State laws with respect to pollution.

ROAD EASEMENT. (Standard)

A perpetual and assignable easement and right-of-way in, on, over and across (the land described in Schedule A) (Tracts Nos. __, __ and __) for the location, construction, operation, maintenance, alteration and replacement of (a) road(s) and appurtenances thereto; together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions and other vegetation, structures, or obstacles within the limits of the right-of-way; (reserving, however, to the owners, their heirs and assigns, the right to cross over or under the right-of-way as access to their adjoining land at the locations indicated in Schedule B); subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

FLOOD PROTECTION LEVEE EASEMENT. (Standard)

A perpetual and assignable right and easement in (the land described in Schedule A) (Tracts Nos. __, __ and __) to construct, maintain, repair, operate, patrol and replace a flood protection levee, including all appurtenances thereto; reserving, however, to the owners, their heirs and assigns, all such rights and privileges in the land as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

FLOWAGE EASEMENT (Occasional Flooding). (Standard)

The perpetual right, power, privilege and easement occasionally to overflow, flood and submerge (the land described in Schedule A) (Tracts Nos. __, __ and __) (and to maintain mosquito control) in connection with the operation and maintenance of the project as authorized by the Act of Congress approved _____, together with all right, title and interest in and to the structures and improvements now situate on the land,

Figure 7-1: (Sheet 2 of 4)

excepting fencing (and also excepting _____ (here identify those structures not designed for human habitation which the District Engineer determines may remain on the land)); provided that no structures for human habitation shall be constructed or maintained on the land, that no other structures shall be constructed or maintained on the land except as may be approved in writing by the representative of the United States in charge of the project, and that no excavation shall be conducted and no landfill placed on the land without such approval as to the location and method of excavation and/or placement of landfill; the above estate is taken subject to existing easements for public roads and highways, public utilities, railroads and pipelines; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used and enjoyed without interfering with the use of the project for the purposes authorized by Congress or abridging the rights and easement hereby acquired; provided further that any use of the land shall be subject to Federal and State laws with respect to pollution.

TEMPORARY WORK AREA EASEMENT. (Standard)

A temporary easement and right-of-way in, on, over and across (the land described in Schedule A) (Tracts Nos. __, __ and __), for a period not to exceed ____, beginning with date possession of the land is granted to the United States, for use by the United States, its representatives, agents, and contractors as a (borrow area) (work area), including the right to (borrow and/or deposit fill, spoil and waste material thereon) (move, store and remove equipment and supplies, and erect and remove temporary structures on the land) and to perform any other work necessary and incident to the construction of the _____ Project, together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions, and any other vegetation, structures, or obstacles within the limits of the right-of-way; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

GAGE STATION EASEMENT. (Non-Standard)

A perpetual and assignable easement and right-of-way in, on, over and across (the land heretofore described in Schedule A) (Tracts Nos. __, __and __) to locate, construct, operate, maintain, alter, repair and patrol a gaging station; together with the right to trim, cut, fell and remove therefrom all trees, underbrush, obstructions and other vegetation, structures, or obstacles within the limits of the right-of-way; to excavate, dredge, cut away, and remove any or all of said land; and for such other purposes as may be required in connection with said gaging station; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used without interfering with or abridging the rights and easement hereby acquired; subject, however, to existing easements for public roads and highways, public utilities, railroads and pipelines.

Figure 7-1: (Sheet 3 of 4)

FLOWAGE and GROUNDWATER EASEMENT (Permanent Flooding). (Non-Standard)

The perpetual right, power, privilege and easement permanently to overflow, flood, percolate, saturate, and submerge the surface and/or the subsurface and to raise the elevation of the water table, as may be necessary, on the land described (in Schedule A) (as Tracts Nos. __, __ and __) in connection with the operation and maintenance of the Devils Lake Project as authorized by the Act of Congress approved _____, and the continuing right to clear and remove any brush, debris and natural obstructions which, in the opinion of the representative of the United States in charge of the project, may be detrimental to the project, together with all right, title and interest in and to the timber, structures and improvements situate on the land; provided that no structures for human habitation shall be constructed or maintained on the land, that no other structures shall be constructed or maintained on the land except as may be approved in writing by the representative of the United States in charge of the project, and that no excavation shall be conducted and no landfill placed on the land without such approval as to the location and method of excavation and/or placement of landfill; the above estate is taken subject to existing easements for public roads and highways, public utilities, railroads and pipelines; reserving, however, to the landowners, their heirs and assigns, all such rights and privileges as may be used and enjoyed without interfering with the use of the project for the purposes authorized by Congress or abridging the rights and easement hereby acquired; provided further that any use of the land shall be subject to Federal and State laws with respect to pollution.

NOTE: Similar to language as used in flowage and saturation easement used at the Gavins Point Dam – Lewis and Clark Lake Project from Omaha District.

Figure 7-1: (Sheet 4 of 4)

1-Jun-02

ASSESSMENT OF NON-FEDERAL SPONSOR'S REAL ESTATE ACQUISITION CAPABILITY DEVILS LAKE OUTLET

	YES	NO	N/A
I. Legal Authority:			
a. Does the sponsor have legal authority to acquire and hold title to real property for project purposes?	X		
b. Does the sponsor have the power of eminent domain for this project?	X		
c. Does the sponsor have "quick-take" authority for this project?	X		
d. Are any of the lands/interests in land required for the project located outside the sponsor's political boundary?	X		
e. Are any of the lands/interests in land required for the project owned by an entity whose property the sponsor cannot condemn?	X		

COMMENTS: Dry Lake segment includes land within the National Wildlife Refuge, which the Sponsor would not be able to condemn. One parcel of tribal trust and 7 parcels of allotment land are identified for this project. The Sponsor would not be able to condemn these interests.

II. Human Resource Requirements:			
a. Will the sponsor's in-house staff require training to become familiar with the real estate requirements of Federal projects including PL 91-646, as amended?		X	
b. If the answer to II.a. is "yes", has a reasonable plan been developed to provide such training?			
c. Does the sponsor's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project?	X		
d. Is the sponsor's projected in-house staffing level sufficient considering its other workload, if any, and the project schedule?		X	
e. Can the sponsor obtain contractor support, if required, in a timely fashion?	X		
f. Will the sponsor likely request USACE assistance in acquiring real estate? (If "yes", provide description.)			

COMMENTS: Sponsor is not planning on requesting USACE support, but if it becomes necessary, is willing to consider USACE as a resource. Sponsor has not contracted yet for additional staff to perform acquisitions, but does not anticipate a problem with finding staff to assist.

III. Other Project Variables:			
a. Will the sponsor's staff be located within reasonable proximity to the project site?	X		
b. Has the sponsor approved the project/real estate schedule/milestones?		X	

COMMENTS: Sponsor has not reviewed the schedule, but is aware that acquisition deadlines will be abbreviated.

IV. Overall Assessment:			
a. Has the sponsor performed satisfactorily on other USACE projects?	X		
b. With regard to this project, the sponsor is anticipated to be:	fully capable		

(If sponsor is believed to be "insufficiently capable", provide explanation).
COMMENTS: Proposed sponsor has been a sponsor on the Baldhill Dam Safety project.

V. Coordination:			
a. Has this assessment been coordinated with the sponsor?	X		
b. Does the sponsor concur with this assessment? (If "no", provide explanation)	X		

COMMENTS:

Prepared by:

Marcia D. McCloskey

Marcia D. McCloskey
Realty Specialist

Reviewed and Approved by:

Mary M. Muraski

Mary M. Muraski
Chief, Acquisition and Management Branch

June 2002 Real Estate Plan

Exhibit 2

Figure 7-2: Sponsor Assessment

LIKELY FUTURE WITHOUT PROJECT

The Devils Lake Infrastructure Protection Study identified the costs and benefits of flood protection strategies for roads, railroads, State facilities, communities, and rural areas in and around Devils Lake. These strategies would be likely to be pursued in the absence of an outlet or other flood damage reduction plan for Devils Lake. The study initially identified 25 features, which are listed below. Of these 25 features, 8 would not require action in the near future (at the first level of protection) and 1 (No. 25) is being studied separately under the title of "Expanded Infrastructure Protection." The 8 features that would not require action in the near future are shown in italics below. The remaining 16 features would require action in the near future. The 25 features and their projected strategies are as follows:

1. Churchs Ferry - relocation of all structures below elevation 1468.

2. City of Devils Lake - raises of existing levees.

3. Fort Totten - Incremental relocation of structures.

4. City of Minnewaukan - construction of flood protection levee.

5. St. Michael - Incremental relocation of structures.

6. Gilbert C. Grafton Military Reservation - Relocation of structures.

7. Grahams Island State Park - Raise of access road.

8. Rural Areas - Incremental relocation of structures.

9. Red River Valley and Western Railroad - The rail line south from Minnewaukan has been abandoned.

10. Canadian Pacific Railroad - Raise of rail lines.

11. Burlington Northern Santa Fe (BNSF) Railroad along U.S. Highway 2 – Raise of rail lines.

12. BNSF (Churchs Ferry to Cando) - Temporary closure.

13. U.S. Highway 2 - Raise to elevation 1460, then temporary closure.

14. ND Highway 57 (ND Highway 20 to BIA Highway 1) - Incremental raises.

15. ND Highway 57 (BIA Highway 1 to U.S. Highway 281) - Incremental raises.

16. U.S. Highway 281 South - Relocation of road.

17. U.S. Highway 281 North - Raise of road.

18. ND Highway 19 - This highway was being relocated when the economic analysis of alternatives was developed.

19. North Dakota Highway 1 - This road has already been relocated.

20. ND Highway 20 (North of City of Devils Lake) - Temporary closure.

21. ND Highway 20 (City of Devils Lake to ND Highway 57) - Incremental raises.

22. North Dakota Highway 20 - Raise of road.

23. BIA Highway 1 - Raise of road.

24. BIA Highway 6 - BIA has already begun the raise of this road.

25. Roads Acting As Dams - This feature has been moved to the Expanded Infrastructure Protection alternative discussion.

For the 16 features carried forward, a more detailed examination and economic analysis were developed. Only features 2 and 4, levees at the cities of Devils Lake and Minnewaukan, would be implemented as cost-shared Federal projects with the Corps of Engineers as the lead Federal agency. For these two features, a gross appraisal was done. Information presented here is in the form of a Real Estate Plan (REP) as outlined in ER 405-1-12. For some of the other features (3, 5, 7, 10, 11, 16, 17, 22, 23, and 24), St. Paul District Real Estate personnel were asked to provide real estate cost estimates for some strategies during plan development, analysis, and selection. These cost estimates are included in the gross appraisal even where they are costs for strategies that are not projected. Where the projected strategy involves a real estate component, a brief summary of the strategy and a summary of the estimated real estate costs are presented in this REP. A map showing the features can be found at Figure 1.01 in Appendix E.

Table 7-1 lists the 16 alternatives, the respective projected flood protection strategies, and a summary of the real estate costs that were developed by the St. Paul District Real Estate Division. The estimated real estate costs for those features for which Barr Engineering developed costs are included in the cost summaries presented in the main report.

Table 7-1: Likely Future Without Project Features - Estimated Real Estate Costs

Feature	Project Strategy	Total Real Estate Costs
1. Churchs Ferry*	Relocation of all structures	
2. City of Devils Lake	Raise of existing levees	$183,000
3. Fort Totten*	Incremental relocations	
4. City of Minnewaukan	Flood protection levee	$157,000
5. St. Michael*	Incremental relocations	
6. Gilbert C. Grafton Military Reservation	Relocation of structures	$ 0
7. Grahams Island State Park	Raise of access road	$138,000
8. Rural Areas*	Incremental relocations	
10. Canadian Pacific Railroad"	Raise of rail lines	$188,000
11. BNSF Railroad	Raise of rail lines	$266,000
16. U.S. Highway 281 South	Relocation of road	$466,000
17. U.S. Highway 281 North	Raise of road	$232,000
19. ND Highway 1 ***	Relocation of road (completed)	
22. ND Highway 20	Raise of road	$158,000
23. BIA Highway 1	Raise of road	$113,000
24. BIA Highway 6***	Raise of road (underway)	

* Barr Engineering developed costs from FEMA and county data. These costs are included in the main report cost summaries, but are not shown here.
** Strategy is temporary closure; no real estate costs associated with this strategy.
*** These strategies are either completed or underway; costs are not shown here.

Feature 1: Churchs Ferry

Churchs Ferry is located approximately 23 miles northwest of Devils Lake, North Dakota on U.S. Highway 2. Based on the 2000 Census, Churchs Ferry had a population of 77. As the level of Devils Lake continued to rise, FEMA offered buyouts to the residents and business owners in Churchs Ferry. The mayor, Paul Christenson, has indicated that the current population following the FEMA buyouts is 7. The remaining 16 structures within Churchs Ferry include three houses (declined previous FEMA buyout offer), a church, fire hall, city hall, post office, repair shop, bar, school buildings, Masonic lodge, a city shop, a railroad maintenance building, sewage lagoons, and a grain elevator. A new grain elevator is being built 6 miles west of the existing structure along the BNSF mainline. Grain handling and storage operations will move when the construction is complete in summer 2003.

Two strategies were considered: protection of the remaining structures or relocation of structures. Relocation was the only strategy that was feasible both from an economic and constructibility standpoint.

The lead agency for implementation of the relocation strategy would be FEMA. Barr Engineering developed the cost estimate for this strategy based on the actual costs of previous FEMA relocations at Churchs Ferry, information from the FEMA infrastructure database (October 2002), and information provided by the Director of Tax Equalization for Ramsey County, North Dakota. Figure 4.1-1 in Appendix E is a map of this feature.

Feature 2: City of Devils Lake

General Description

The City of Devils Lake is a community of 7,222 people (based on 2000 census). It is located in north central North Dakota, 89 miles west of Grand Forks and 121 miles east of Minot on U.S. Highway 2. It is the county seat for Ramsey County. The city is located along a portion of the north shore of Devils Lake. A levee constructed as a cost-shared project between the city/Ramsey County and the Federal Government acting through the Corps of Engineers protects the city and some adjacent areas.

Project Authorization

In 1985, a levee at Devils Lake was constructed under the authority of Section 205 of the 1948 Flood Control Act. In 1996, in response to rising lake levels, which had reached elevation 1436, the levee was raised under the authority of Public Law 84-99. The levee has been raised and extended several times in response to the continuously rising lake levels. The last raise in 1998 was intended to accommodate a design lake level of 1450. An additional raise is in the planning stage. The design lake level for this raise is elevation 1454. The maximum lake elevation would be 1460, at which point the lake would begin to naturally overflow to the Sheyenne River. The analysis for this raise is detailed in the Alternative Alignment Study prepared by Barr Engineering in January 2002.

Project Description

The current raise designed for the Devils Lake levees consists of four features:

> **Lakewood area**: Tieback levees on the Devils Lake Golf Course that would extend the existing levee south to Ramsey County Highway 1. An additional levee would connect the high ground along a narrow gap running from Fair Road southeast to the south side of Samuelson Street.
>
> **Acorn Ridge area**: An 80-foot-long extension of the existing levee to the west and a 1,700-foot-long levee (maximum height 3 feet) across an existing farm field. The levee across the farm field runs southwesterly from the Quiet Acres development on the north.

North Creel Bay area: A 500-foot-long extension of the existing Stage 1A levee that runs north from State Highway 19. The existing levee is located under a gravel roadway; the extension would continue north along the roadway and the roadway would be maintained as a part of the levee.

Highway 2 area: A 270-foot-long extension of an existing levee and a 1,800-foot-long levee to be constructed within the right-of-way for U.S. Highway 2.

Sponsor-Owned LER

The Sponsors for this project would be Ramsey County and the city of Devils Lake. The county does not own any of the real estate identified to be acquired for this project. The city of Devils Lake or Ramsey County owns levee easement for the existing levees, which are adjacent to some of the components of the levee raise. The city also owns in fee one parcel at the municipal airport, which is owned and operated by the city. The remaining LER to be acquired is privately owned.

Estates

All of the construction features are permanent levees. It is anticipated that the estates to be required would be the standard estates for fee, flood protection levee easement, and temporary work area easement. Copies of the proposed estates are included in Figure 7-1. The project drawings do not distinguish between areas needed in permanent and temporary easements. The total acres needed for levee construction were given as 8 acres. Areas that may be within existing road rights-of-way are excluded from this total. The construction would require acquisition of an additional 1.2 acres for mitigation. These mitigation acres would need to be acquired in fee. For gross appraisal purposes all of the areas to be acquired were valued in fee because insufficient details were provided to identify the areas accurately enough to distinguish the estates required.

Existing Federal Project

No other existing Federal project lies within the LER required for this project. This project is an expansion of the current Devils Lake levee project.

Federally Owned Lands

No federally owned lands are within the LER required for this project.

Navigational Servitude

No real estate interests identified for this project are within the navigational servitude accruing under the Commerce Clause of the US Constitution and/or Section 10 of the Rivers and Harbors Act of 1889 (as amended).

Map

A map showing the general location of all the likely future without-project features is contained in Appendix E at Figure 1.01. A map for this feature is at Figure 4.2-1 in Appendix E.

Induced Flooding

As the levees at the city of Devils Lake have been raised and the size of the area protected by these levees has increased, the likelihood that this project may induce flooding has also increased. Some preliminary work has been done in an attempt to identify what, if any, effect these levees may have in regard to lake levels. At this time, there are some indications that the levees might be contributing to slightly higher lake elevations; however, studies have not been done in enough detail to identify the magnitude of stage increases or the area affected. As studies progress and the longer-term changes in the lake due to natural causes can be monitored and assessed, it will be necessary to examine the data generated and the conclusions reached to determine if changes in lake levels, if any, caused by the levees result in a situation where induced flooding, if any, would require compensation of affected landowners.

Baseline Cost Estimate

The number of owners is estimated to be nine. The estimated real estate costs for both the feature and the mitigation are as follows:

	Federal	Non-Federal	Total
Lands/damages	0	$39,000	$39,000
Contingencies		22,438	22,438
RE Admin. costs	$22,700	37,574	60,274
Contingencies (25%)	18,300	42,988	61,288
Total	41,000	142,000	183,000

Public Law 91-646 Residence/Business Relocations

The projected levee raises would not require any relocation of residences or businesses under Public Law 91-646.

Mineral Activity

No known mineral deposits are located within or adjacent to the proposed project.

Sponsor Assessment

Sponsor assessments for Ramsey County and the city of Devils Lake are attached to this REP (Figure 7-3).

ASSESSMENT OF NON-FEDERAL SPONSOR'S REAL ESTATE ACQUISITION CAPABILITY DEVILS LAKE LEVEES - CITY OF DEVILS LAKE, ND

	YES	NO	N/A
I. Legal Authority			
a. Does the sponsor have legal authority to acquire and hold title to real property for project purposes?	X		
b. Does the sponsor have the power of eminent domain for this project?	X		
c. Does the sponsor have "quick take" authority for this project?	X		
d. Are any of the lands/interests in land required for the project located outside the sponsor's political boundary?	X		
e. Are any of the lands/interests in land required for the project owned by an entity whose property the sponsor cannot condemn?		X.	

COMMENTS:

II. Human Resource Requirements			
a. Will the sponsor's in-house staff require training to become familiar with the real estate requirements of Federal projects including PL 91-646, as amended?		X	
b. If the answer to II.a. is "yes," has a reasonable plan been developed to provide such training?			
c. Does the sponsor's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project?	X		
d. Is the sponsor's projected in-house staffing level sufficient considering its other workload, if any, and the project schedule?	X		
e. Can the sponsor obtain contractor support, if requred, in a timely fashion?	X		
f. Will the sponsor likely request USACE assistance in acquiring real estate? (If "yes," provide description.)		X	

COMMENTS:

III. Other Project Variables			
a. Will the sponsor's in-house staff be located within reasonable proximity to the project site?	X		
b. Has the sponsor approved the project/real estate schedule/milestones?		X	

COMMENTS: Project schedule/milestones have not been established.

IV. Overall Assessment			
a. Has the sponsor performed satisfactorily on other USACE projects?	X		
	Fully capable		

COMMENTS:

V. Coordination			
a. Has this assessment been coordinated with this the sponsor?		X	
b. Does the sponsor concur with this assessment? (If "no," provided explanation.)			X

COMMENTS: Sponsor assessment is based on Sponsor's past performance on Federal projects.

Prepared by:

Mary M. Muraski
Chief, Acquisition & Management Branch

Stuart P. Jackson
Acting Chief, Real Estate Division

Figure 7-3: Sponsor Assessments (Sheet 1 of 2)

ASSESSMENT OF NON-FEDERAL SPONSOR'S REAL ESTATE ACQUISITION CAPABILITY DEVILS LAKE LEVEES - RAMSEY COUNTY, ND

	YES	NO	N/A
I. Legal Authority			
a. Does the sponsor have legal authority to acquire and hold title to real property for project purposes?	X		
b. Does the sponsor have the power of eminent domain for this project?	X		
c. Does the sponsor have "quick take" authority for this project?	X		
d. Are any of the lands/interests in land required for the project located outside the sponsor's political boundary?		X	
e. Are any of the lands/interests in land required for the project owned by an entity whose property the sponsor cannot condemn?		X	
COMMENTS:			
II. Human Resource Requirements			
a. Will the sponsor's in-house staff require training to become familiar with the real estate requirements of Federal projects including PL 91-646, as amended?		X	
b. If the answer to II.a. is "yes," has a reasonable plan been developed to provide such training?			
c. Does the sponsor's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project?	X		
d. Is the sponsor's projected in-house staffing level sufficient considering its other workload, if any, and the project schedule?	X		
e. Can the sponsor obtain contractor support, if requred, in a timely fashion?	X		
f. Will the sponsor likely request USACE assistance in acquiring real estate? (If "yes," provide description.)		X	
COMMENTS:			
III. Other Project Variables			
a. Will the sponsor's in-house staff be located within reasonable proximity to the project site?	X		
b. Has the sponsor approved the project/real estate schedule/milestones?		X	
COMMENTS: Project schedule/milestones have not been established.			
IV. Overall Assessment			
a. Has the sponsor performed satisfactorily on other USACE projects?	X		
Fully capable			
COMMENTS:			
V. Coordination			
a. Has this assessment been coordinated with this the sponsor?		X	
b. Does the sponsor concur with this assessment? (If "no," provided explanation.)			X
COMMENTS: Sponsor assessment is based on Sponsor's past performance on Federal projects.			

Prepared by:

Mary M. Muraski
Chief, Acquisition & Management Branch

Stuart P. Jackson
Acting Chief, Real Estate Division

Figure 7-3: (Sheet 2 of 2)

Zoning

No application or enactment of zoning ordinances will be used for the proposed project.

Acquisition Schedule

An acquisition schedule has not been developed for this project. An advance acquisition letter will be provided to the project sponsor if initiation of advance acquisition is contemplated.

Facility/Utility Relocations

The Alternative Alignment Study did not identify any relocations of facilities or utilities. If any were to be identified in later planning/design stages, an Attorney's Opinion of Compensability would be prepared.

Environmental Clearance

An Environmental Assessment has been prepared for the recommended raise. It has been finalized, but has not yet been signed. A Phase 1 HTRW analysis has also been completed.

Landowners

The total number of landowners affected is estimated at nine. Most residents in the area are well aware of the continuing need to provide protection to the community, and these affected owners are probably resigned to the eventuality of the project. While there may be some reluctance by certain owners to accept the appraised values, it is expected that the Sponsor will be able to successfully complete purchase negotiations with most, if not all, of the owners. A higher than usual rate of condemnation is not expected.

Feature 3: Fort Totten

Fort Totten is a community of 952 people (based on the 2000 Census). It is located along the south side of Devils Lake on the Spirit Lake Nation Reservation in Benson County. The majority of the town is adjacent to North Dakota Highway 57 just northeast of the intersection of Highway 57 and BIA Highway 1.

Incremental relocation of flood-threatened structures is projected to be the most appropriate strategy for this community. The alternative of constructing a levee to protect Fort Totten was examined. The analysis indicated that incremental relocations had the largest net benefits. Also, the number of relocations to adequately prevent flood damages at Fort Totten is limited. The majority of the community infrastructure would not require relocations, unlike the city of Minnewaukan, where the entire city would have to be relocated and reestablished.

The lead agency for implementation of the relocation alternative would be FEMA. Barr Engineering developed the cost estimate for this alternative based on the actual costs of previous FEMA relocations in the Devils Lake basin, information from the FEMA infrastructure database (October 2002), and information provided by the Director of Tax Equalization for Ramsey County, North Dakota. A map of this feature can be found at Figure 4.3-1 in Appendix E.

The gross appraisal contains an estimate of the real estate costs for the levee alternative. However, the limited relocations are more cost-effective. Barr Engineering estimated the relocation costs, and these costs are included in the cost summaries presented in the main report. They are not shown in this chapter.

Feature 4: City of Minnewaukan

General Description

The city of Minnewaukan is a community of 318 people (based on the 2000 Census). It is located on the west side of Devils Lake in Benson County approximately 20 miles west of the city of Devils Lake. U.S. Highway 281 runs north-south through the city limits. Minnewaukan is the Benson County seat. The city covers approximately 250 acres and includes residential and commercial development, municipal facilities (public library, courthouse, fairgrounds, etc.), utility infrastructure (roads, sewers, electrical and telephone lines, etc.) and transportation infrastructure (U.S. Highway 281). The flood protection strategy with the largest net benefits is incremental levee raises. Relocation of the entire city to the west was also considered, but it was considerably more costly than the levee strategy.

Project Authorization

Flood protection at Minnewaukan is being studied under the authority of Section 205 of the 1948 Flood Control Act.

Project Description

The levee alternative would consist of a U-shaped levee on the east side of Minnewaukan. It would extend from high ground south of the city to high ground northwest of the city.

Sponsor-Owned LER

The study has not progressed to the point of identifying a Sponsor. The most likely candidates would be the city of Minnewaukan and/or Benson County. The city owns some of the land for the project, but the majority of it will need to be purchased from other landowners. Some of the land for the project is outside of the city's corporate boundaries. The city will be able to annex the necessary property in order to condemn it, should condemnation be required.

Estates

All of the construction features are permanent levees. It is anticipated that the estates to be required would be the standard estates for fee, flood protection levee, temporary work area easements, and flowage easements (occasional flooding) for ponding areas needed for interior drainage (copies attached in Figure 7-1). The project drawings do not distinguish between areas needed in permanent and temporary easements. The total acres needed for levee construction and ponding areas are 51.85 acres with an additional 41.71 acres for mitigation lands. Areas that may be within existing road rights-of-way are excluded from this total. The mitigation acres would need to be acquired in fee. For gross appraisal purposes all of the areas to be acquired were valued in fee because insufficient details were provided to identify the areas accurately enough to distinguish the estates required.

Existing Federal Project

The only existing Federal project within the LER required for this project are USFWS easements for waterfowl management.

Federally Owned Lands

No federally fee-owned lands are within the LER identified. The present project design would require acquisition of approximately 6.13 acres of lands encumbered with Federal easements for waterfowl management and managed by the USFWS. Project features are being coordinated with the USFWS to determine compatibility.

Navigational Servitude

No real estate interests identified for this project are within navigational servitude accruing under the Commerce Clause of the US Constitution and/or Section 10 of the Rivers and Harbors Act of 1889 (as amended).

Map

A map showing the general location of all the likely future without-project features is contained in Appendix E at Figure 1.01. A map for this feature is included in Figure 4.4-1 in Appendix E.

Induced Flooding

Constructing a levee to protect the city of Minnewaukan has the potential to induce flooding at other locations around the lake. Studies for the possible construction of levees at Minnewaukan have not progressed to the point where enough data have been developed to determine if this possible effect would occur. If conditions in the basin and the results of future studies provide justification for construction of levees, this issue will

have to be studied in enough detail to allow a determination of the effect of any induced flooding and whether induced flooding, if it were to occur, would warrant compensation of affected landowners as part of the levee project.

Baseline Cost Estimate

The number of owners is estimated to be 25. The estimated real estate costs are as follows:

	Federal	Non-Federal	Total
Lands/damages	0	$18,827	$18,827
Contingencies		3,658	3,658
RE Admin. costs	$35,060	69,137	104,197
Contingencies (25%)	9,260	21,058	30,318
Total	44,320	112,680	157,000

Public Law 91-646 Residence/Business Relocations

The projected levee would not require any relocation of residences or businesses under Public Law 91-646. However, three barns and several county fair buildings located on the wet side of the proposed levee would be relocated. It is not clear from the maps provided, but two houses might need to be moved because of the ponding areas identified near the levee. Two buildings (a church and its subsidiary building) have already been moved through the FEMA Program. Barr Engineering estimated the relocation costs for these structures. Their estimate was based on FEMA and Benson County data. The relocation estimate, dated January 10, 2003 by Barr Engineering, is $496,000.00.

Mineral Activity

No known mineral deposits are located within or adjacent to the proposed project.

Sponsor Assessment

The most likely Sponsor for a cost-shared levee project at Minnewaukan would be the city of Minnewaukan and/or Benson County. Because Federal interest has not yet been established for such a project, no detailed information on Sponsor capability has been identified. Because of the preliminary nature of any such project, contact with potential Sponsors at this time has not been encouraged to avoid creating any misleading perceptions. A Sponsor assessment for the city of Minnewaukan (Figure 7-4) was prepared using readily available information. If this study were to advance, a final assessment would be prepared after consultation with the identified Sponsor.

Zoning

No application or enactment of zoning ordinances is anticipated for the proposed project.

ASSESSMENT OF NON-FEDERAL SPONSOR'S REAL ESTATE ACQUISITION CAPABILITY SECTION 205 FCP - MINNEWAUKAN, ND

	YES	NO	N/A
I. Legal Authority			
a. Does the sponsor have legal authority to acquire and hold title to real property for project purposes?	X		
b. Does the sponsor have the power of eminent domain for this project?	X		
c. Does the sponsor have "quick take" authority for this project?	X		
d. Are any of the lands/interests in land required for the project located outside the sponsor's political boundary?	X		
e. Are any of the lands/interests in land required for the project owned by an entity whose property the sponsor cannot condemn?		X	
COMMENTS:			
II. Human Resource Requirements			
a. Will the sponsor's in-house staff require training to become familiar with the real estate requirements of Federal projects including PL 91-646, as amended?		X	
b. If the answer to II.a. is "yes," has a reasonable plan been developed to provide such training?			
c. Does the sponsor's in-house staff have sufficient real estate acquisition experience to meet its responsibilities for the project?	X		
d. Is the sponsor's projected in-house staffing level sufficient considering its other workload, if any, and the project schedule?	X		
e. Can the sponsor obtain contractor support, if requred, in a timely fashion?	X		
f. Will the sponsor likely request USACE assistance in acquiring real estate? (If "yes," provide description.)		X	
COMMENTS:			
III. Other Project Variables			
a. Will the sponsor's in-house staff be located within reasonable proximity to the project site?	X		
b. Has the sponsor approved the project/real estate schedule/milestones?		X	
COMMENTS: Project schedule/milestones have not been established.			
IV. Overall Assessment			
a. Has the sponsor performed satisfactorily on other USACE projects?	See Comment		
	Fully capable		
COMMENTS: City has never been a Sponsor on a cost-shared project.			
V. Coordination			
a. Has this assessment been coordinated with this the sponsor?		X	
b. Does the sponsor concur with this assessment? (If "no," provided explanation.)			X
COMMENTS: Study has not progressed to the point where Sponsor coordination is appropriate.			

Prepared by:

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Chief, Acquisition & Management Branch

Stuart P Jackson

Stuart P. Jackson
Acting Chief, Real Estate Division

Figure 7-4: Sponsor Assessment

Acquisition Schedule

The Section 205 study at Minnewaukan has not progressed far enough to develop a project or acquisition schedule. If the study identifies a feasible project, an acquisition schedule would be developed prior to completion of feasibility studies. It is expected that the schedule would allow an appropriate amount of time between PCA execution and construction contract award for the Sponsor to acquire the needed real estate (estimate between 12 and 18 months).

Facility/Utility Relocations

The Section 205 study at Minnewaukan has not progressed far enough to identify the facilities/utilities affected. Therefore, it is not possible to prepare an Attorney's Opinion of Compensability for facilities/utilities. When, and if, the study advances and a feasible alternative is identified, a preliminary Attorney's Opinion will be prepared prior to completion of the feasibility study. A final opinion would be prepared during plans and specifications.

Environmental Clearance

The Section 205 study at Minnewaukan has not progressed far enough to complete the environmental studies necessary to meet NEPA requirements. If the study progresses, an environmental assessment and HTRW evaluation would need to be completed and documented prior to completion of a feasibility study.

Landowners

The total number of landowners affected is estimated at 25. Most residents in the area are well aware of the continuing need to provide protection to the community, and these affected owners are probably resigned to the eventuality of the project. While there may be some reluctance by certain owners to accept the appraised values, it is expected that the Sponsor will be able to successfully complete purchase negotiations with most, if not all, of the owners. A higher than usual rate of condemnation is not expected.

Feature 5: St. Michael

St. Michael is an unincorporated town located along the south side of Devils Lake in Benson County. The majority of the town is adjacent to BIA Highway 1 just north of the intersection of BIA Highway 1 and BIA Highway 6. The Spirit Lake Casino and Hotel is located nearby.

St. Michael has not been significantly affected by the rising lake level to date; however, several homes and a sewage lagoon could be affected by rising lake levels. St. Michael is a primary community for the Spirit Lake Nation.

The flood protection strategy with the largest net benefits is relocation of 10 residences and the community's sewage lagoons. The alternative of constructing a levee to protect St. Michael was examined. The analysis indicated that incremental relocations had the largest net benefits. Also, the number of relocations to adequately prevent flood damages at St. Michael is limited. The majority of the community infrastructure would not require relocations, unlike the city of Minnewaukan where the entire city would have to be relocated and reestablished.

The lead agency for implementation of the relocation alternative would be FEMA. Barr Engineering developed the cost estimate for this alternative based on the actual costs of previous FEMA relocations in the Devils Lake basin, information from the FEMA infrastructure database (October 2002), and information provided by the Director of Tax Equalization for Ramsey County, North Dakota. Figure 4.5-1 in Appendix E is a map of this feature.

The gross appraisal contains an estimate of the real estate costs for the levee alternative. However, the limited relocations are more cost-effective. Barr Engineering prepared the estimate of relocation costs. These costs are included in the cost summaries presented in the main report, but they are not shown in this chapter.

Feature 6: Gilbert C. Grafton Military Reserve

Gilbert C. Grafton Military Reservation is located approximately 6 miles south southwest of the city of Devils Lake along the west side of ND Highway 20. The State of North Dakota (North Dakota Army National Guard) is responsible for managing and maintaining Camp Grafton.

Camp Grafton is the main training site for the North Dakota Army National Guard. It is a 1,600-acre camp, accommodating up to 3,000 soldiers with housing, dining hall facilities, field, and classroom training facilities. This main camp facility is also associated with the Camp Grafton South training area, located 35 miles to the south. Camp Grafton is important because it is the major training facility for the North Dakota Army National Guard, and its operation has a major economic impact on the community.

The general protection strategy for Camp Grafton includes the following:

- ND Highway 20 would be raised to provide access to the camp.
- The camp will not close; a significant portion is above elevation 1475.
- The main access road would be raised when Highway 20 is raised.
- The main gate is the only gate that will be maintained and raised.
- The existing levee along Avenue A will be raised.
- Buildings associated with the munitions storage area will be moved.

The Reservation is moving the munitions storage buildings. Adequate land is available on the Reservation to accommodate the move. Barr Engineering developed a cost estimate for the move. The estimate indicates that real estate costs are $0 because the

Reservation does not need to purchase additional real estate for this move. A map of this feature can be found at Figure 4.6-1 in Appendix E.

Feature 7: Grahams Island State Park

Grahams Island State Park is located 10 miles west of the city of Devils Lake and 5 miles south of ND Highway 19 along the border between Benson and Ramsey counties. Grahams Island State Park is the largest and most developed State park facility on Devils Lake, with campground, beach, harbor, ranger and manager facilities, activity center, and trails. The campground covers 1,100 acres, and has space for 100 campers, as well as four sleeping cabins. The park has potable water and sewer lines, with an on-site treatment facility.

In addition to the State Park facility, several farmsteads are located on Grahams Island. They would be stranded if access to the island were lost. The Infrastructure Protection Study evaluation included these farmsteads in the damage assessment of the Grahams Island feature.

Grahams Island is important because it is considered a major tourist attraction in the area. It is the largest and most used State park facility around Devils Lake. Park staff estimate that a total of 72,800 visitors used the park in 1995. Access to the park is affected by rising water levels; the park was closed in 1997 when the access road was under water. During 1997, approximately $2.2 million was invested in raising the access road to the park. In 1999, the park had 73,770 visitors.

The North Dakota Parks and Recreation Department is responsible for operating and maintaining the Grahams Island State Park. The projected strategy for the park is a raise of the access road. Although this feature would not be a cost-shared project through the Corps of Engineers, St. Paul District Real Estate personnel estimated real estate costs for this feature. The estimated real estate costs are summarized below:

Lands/damages	$29,352
Contingencies	17,855
Admin. costs	73,493
Contingencies	17,300
Total	138,000

There are an estimated nine owners for this feature, with approximately 47.82 acres proposed for the feature real estate and an additional 84.74 acres for mitigation. Figure 4.7-1 in Appendix E is a map of this feature.

Feature 8: Rural Features

Rural structures are located throughout Ramsey, Benson, Nelson, and Towner Counties surrounding Devils Lake and Stump Lake. The rural features consist of land and rural structures adjacent to the lake, including farmsteads and farmland, residences, State and

regional parks, and communities not already covered as separate features. The rural areas were divided into two areas:

1. Devils Lake Rural Areas, including Ramsey, Benson, and Towner Counties (except the communities of Devils Lake, Churchs Ferry, Minnewaukan, Fort Totten, St. Michael; and the State features of Camp Grafton and Grahams Island).

2. Stump Lake Rural Areas, including Nelson County.

The projected strategy for rural features is incremental relocations. The lead Federal agency for this strategy is FEMA. Barr Engineering prepared the estimate of relocation costs using the information from the FEMA infrastructure database (October 2002). This estimate is shown in the cost summary in the main report but it is not presented in this chapter. Appendix E contains maps at Figures 4.8-1 through 4.8-1e.

Feature 10: Canadian Pacific Railroad

Feature 10 is the approximately 18-mile portion of the Canadian Pacific Railroad from the city of Devils Lake west to U.S. Highway 281 near Harlow, North Dakota. The rail line was constructed on raised embankments. Approximately 3 miles near the west end of the line is impacted, but not submerged, by a portion of Devils Lake at its current lake level. Culverts under the rail line allow water passage at Mauvais Coulee and Six Mile Bay.

The tracks between the city of Devils Lake and Harlowe were predominantly used for grain shipments. This rail line has been temporarily closed since 1998 due to erosion of the embankment. The current lake level (approximately 1447) is about 3 feet below the lowest elevation of the tracks (1450); however, wave action has caused erosion damage to the sides of the rail bed, making the rail line too dangerous to use. Grain is now trucked to a BNSF line instead of being shipped by rail. Northern Plains Railroad, lessee of Canadian Pacific Railroad tracks, does not consider the railroad "abandoned" because it intends to reopen the tracks if it receives funds from the U.S. Congress for repair and raises. Instead, the railroad is considered "embargoed."

The projected strategy for this feature is raising the rail line to maintain the transportation corridor. Such a raise would not be a cost-shared project through the Corps of Engineers; however, St. Paul District Real Estate personnel were asked to estimate the real estate costs associated with such a raise. The estimated real estate costs are summarized below:

Lands/damages	$27,951
Contingencies	17,651
Admin. costs	114,421
Contingencies	27,977
Total	188,000

Real estate needs are estimated to be 47.77 acres for the feature and 83.23 acres for mitigation. Specific areas for mitigation have not been identified to date. No federally fee-owned lands are within the LER required for this alternative. To raise the line, the railroad would need to acquire approximately 8.31 acres of lands encumbered with Federal easements for waterfowl management. These easements are managed by the FWS for waterfowl production and would require a compatibility determination by the Service. There are an estimated 17 owners. Appendix E contains a map at Figure 4.10-1.

Feature 11: Burlington Northern Santa Fe (BNSF) Railroad (Along U.S. Highway 2)

Feature 11 is the portion of the BNSF Railroad (along U.S. Highway 2) from the city of Devils Lake northwest to Churchs Ferry. The rail line was constructed on raised embankments. Two concrete bridges are located along this stretch of rail. One bridge spans Channel "A," and a second bridge spans the Mauvais Coulee near Churchs Ferry.

The BNSF Railroad (along U.S. Highway 2) is important because the track is a transcontinental freight route that extends from the State of New York to the State of Washington (through Devils Lake). Amtrak passenger routes use the track, and many other companies use the track for shipping a variety of products across the country.

The projected strategy for this feature is raising the rail line to maintain the transportation corridor. Although a raise of the BNSF rail line would not be a cost-shared project through the Corps of Engineers, St. Paul District Real Estate personnel were asked to estimate the real estate costs associated with such a raise. The estimated real estate costs are summarized below:

Lands/damages	$89,646
Contingencies	23,573
Admin. costs	117,704
Contingencies	35,077
Total	266,000

Approximately 148.72 acres are estimated to be required for acquisition and an additional 250.68 acres are estimated for mitigation. Specific areas for mitigation have not been identified to date. No federally fee-owned lands are within the LER required for this alternative. To raise the line, the railroad would need to acquire approximately 18.06 acres of lands encumbered with Federal easements for waterfowl management. These easements are managed by the FWS for waterfowl production and would require a compatibility determination by the Service. There are 20 owners estimated for this feature. A map can be found at Figure 4.11-1 in Appendix E.

Feature 16: U.S. Highway 281 (South of U.S. Highway 2)

Feature 16 is the 25.5-mile-long portion of U.S. Highway 281 extending from its intersection with ND Highway 57 at the south end to its intersection with U.S. Highway 2

near Churchs Ferry at the north end. Highway 281 (South of Highway 2) passes through the city of Minnewaukan, and the townships of Normania, Riggin, West Bay, Oberon, and Lallie. All of Feature 16 is located in Benson County.

Highway 281 is a two-lane bituminous highway. The entire highway route spans the United States from Canada to Texas. It is classified as a principal arterial highway and National Highway System route. Average daily traffic counts for this feature were 659 in 1994 and 946 in 2002.

This portion of Highway 281 is important because it is a major traffic route in the area, including the main route between Minnewaukan and Churchs Ferry. It is vital to serving local transportation, agricultural needs, and moving products through the area. In response to rising lake levels, the highway has been raised repeatedly to maintain the transportation corridor.

The projected flood protection strategy is the relocation of this portion of Highway 281 to the west. The relocation would begin at Minnewaukan on the south and connect to Highway 2 on the north just west of Churchs Ferry. The highway would then be outside the maximum flood extent of Devils Lake.

The lead agency for this relocation would be the North Dakota Department of Transportation. Although the Highway 281 relocation would not be a cost-shared project through the Corps of Engineers, St. Paul District Real Estate personnel were asked to estimate the real estate costs associated with such a raise. The estimated real estate costs are summarized below:

Lands/damages	$163,194
Contingencies	32,824
Admin. costs	222,682
Contingencies	47,300
Total	466,000

It has been estimated that 299.51 acres would be necessary for this feature with an additional 235.83 acres for mitigation purposes. Specific areas for mitigation have not been identified to date. No federally fee-owned lands are within the LER required for this alternative. To raise the road, the sponsor would need to acquire approximately 57.31 acres of lands encumbered with Federal easements for waterfowl management. These easements are managed by the FWS for waterfowl production and would require a compatibility determination by the Service. It is estimated that there are 43 owners. A map is contained in Appendix E at Figure 4.16-1.

Feature 17: U.S. Highway 281 (North of U.S. Highway 2)

Feature 17 is the portion of U.S. Highway 281 north of U.S. Highway 2 located in Towner County and along the borders of Ramsey and Benson Counties. It extends 16.5 miles from its intersection with Highway 2 outside of Churchs Ferry at the south to the

city of Cando at the north. Feature 17 passes through the townships of Olson, Cando, Atkins, Maza, Irvine, Chain Lakes, Normania, and Coulee.

Highway 281 north of Highway 2 is a two-lane bituminous highway. The entire highway route spans the United States from Canada to Texas. It is classified as a principal arterial highway and National Highway System route. Average daily traffic counts for this feature were 1,250 in 1994 and 1,075 in 2002.

This portion of Highway 281 is important because it is a major traffic route in the area, including the main route between Cando and Churchs Ferry. It is vital to serving local transportation, agricultural needs, and moving products through the area.

The projected flood protection strategy is the raising of selected portions of the existing highway to maintain the transportation corridor. The lead agency for this relocation would be the North Dakota Department of Transportation. Although the Highway 281 relocation would not be a cost-shared project through the Corps of Engineers, St. Paul District Real Estate personnel were asked to estimate the real estate costs associated with such a raise. The estimated real estate costs are summarized below:

Lands/damages	$63,591
Contingencies	20,844
Admin. costs	121,084
Contingencies	26,481
Total	232,000

An estimated 102.08 acres are necessary for the feature components and an additional 178.24 acres for mitigation. Specific areas for mitigation have not been identified to date. No federally fee-owned lands are within the LER required for this alternative. To raise the road, the sponsor would need to acquire approximately 3.36 acres of lands encumbered with Federal easements for waterfowl management. These easements are managed by the FWS for waterfowl production and would require a compatibility determination by the Service. There are estimated to be 20 owners in this feature. Figure 4.17-1 in Appendix E is a map of this feature.

Feature 19: ND Highway 1

Feature 19 is the portion of ND Highway 1 in Nelson County that begins at the southern ends of Sections 15 and 16 in Wamduska Township, and continues south to the southern end of the border between Sections 34 and 35. It extends approximately 3.4 miles across this stretch. Figure 4.19-1 in Appendix E is a map of this feature.

ND Highway 1 in Wamduska Township is a two-lane bituminous-surfaced State highway. The centerline elevation varies from a minimum of 1465 just east of the easternmost part of Stump Lake to 1503 approximately 3 miles south of Stump Lake. Average daily traffic counts for this feature were 638 in 1994 and 469 in 2002.

This portion of ND Highway 1 is important because it is a major north-south traffic route for the area east of Devils Lake and Stump Lake. It is vital to serving local transportation, agricultural needs, and moving products through the area. The Average Daily Traffic (ADT) counts on this highway were 469 in 2002.

The projected strategy for Highway 19 was relocation of one reach of highway to maintain the transportation corridor. This feature has already been accomplished; therefore, no further discussion is necessary in this document.

Feature 22: ND Highway 20 (ND Highway 57 to Tokio)

ND Highway 20 (ND Highway 57 to Tokio) is located in Mission Township, Benson County and on the Spirit Lake Nation Reservation. The feature extends 10.6 miles between ND Highway 57 at the northwest to the town of Tokio to the south.

ND Highway 20 is a two-lane bituminous-surfaced State highway. The centerline elevation varies from 1445 to 1495 near Tokio. Average daily traffic counts for this feature were 1,070 in 1994 and 663 in 2002.

ND Highway 20 is important because it is the major north/south arterial route through the Devils Lake region. It provides primary access from the north and south between the city of Devils Lake and Mission Township and the eastern portion of the Spirit Lake Nation Reservation.

The projected flood protection strategy is an incremental road raise to elevation 1457.5. The lead agency for this relocation would be the North Dakota Department of Transportation. Although this strategy would not be a cost-shared project through the Corps of Engineers, St. Paul District Real Estate personnel were asked to estimate the real estate costs associated with such a raise. The estimated real estate costs are summarized below:

Lands/damages	$27,583
Contingencies	18,481
Admin. costs	80,900
Contingencies	31,036
Total	158,000

The real estate required is estimated to be 57.97 acres for the feature and an additional 65.12 for mitigation. Specific areas for mitigation have not been identified to date. No federally fee-owned lands are within the LER required for this alternative. To raise the road, the sponsor would need to acquire approximately 3.19 acres of lands encumbered with Federal easements for waterfowl management. These easements are managed by the FWS for waterfowl production and would require a compatibility determination by the Service. There are an estimated 14 owners in this feature. Figure 4.22-1 in Appendix E is a map of this feature.

Feature 23: BIA Highway 1

BIA Highway 1 is located in Sections 7, 8, and 17 of Mission Township in Benson County and on the Spirit Lake Nation Reservation. The feature extends 2.72 miles between ND Highway 57 at the northwest to Highway BIA 6 to the southeast.

BIA Highway 1 is a two-lane bituminous-surfaced Federal highway. The centerline elevation varies from 1451 to 1488, and crosses Mission Bay (a portion of Devil's Lake) at its northwest end.

BIA Highway 1 is important because it is the major northbound and southbound route to and from the town of St. Michael and surrounding areas.

The projected flood protection strategy is a road raise. The lead agency for this relocation would be the North Dakota Department of Transportation. Although this strategy would not be a cost-shared project through the Corps of Engineers, St. Paul District Real Estate personnel were asked to estimate the real estate costs associated with such a raise. The estimated real estate costs are summarized below:

Lands/damages	$7,498
Contingencies	15,835
Admin. costs	75,052
Contingencies	14,615
Total	113,000

The real estate required for this feature is estimated to be 8.79 acres with an additional 17.52 acres for mitigation. There are estimated to be eight owners. Figure 4.23-1 in Appendix E is a map of this feature.

Feature 24: BIA Highway 6

Feature 24 is the 9-mile-long portion of BIA Highway 6 between Fort Totten at the west and ND Highway 20 at the east and is located in Benson County.

BIA Highway 6 is a two-lane bituminous-surfaced Federal highway. The centerline elevation varies from 1625.0 just east of Fort Totten to 1440.0 just west of ND Highway 20.

BIA Highway 6 is important because it is a major traffic route in the area, including the main route between Fort Totten and St. Michael. The Average Daily Traffic (ADT) counts on this highway were not available.

The projected strategy for BIA Highway 6 is a road raise to maintain the transportation corridor. This action has already begun; therefore, no further discussion is necessary in this document.

The gross appraisal contains an estimate of the real estate costs for the levee alternative. However, because this action has already begun, administrative costs were not developed. Therefore, costs are not presented.

EXPANDED INFRASTRUCTURE PROTECTION (ROADS ACTING AS DAMS)

General Description

This Real Estate Plan (REP) is part of the Integrated Planning Report and Environmental Impact Statement (EIS) for the Devils Lake Project. At several locations around Devils Lake, roads are holding back water, providing barriers to the rising and expanding waters of Devils Lake. Because these roads are acting as dams, but are not constructed to function as dams, they pose a potential safety hazard to road users and to the people living behind them and using the areas being sheltered by these barriers. This alternative examines the economic feasibility of taking additional measures to provide a safe level of flood protection behind these barriers.

Project Authorization

The Corps would normally be involved in a support for others role for this type of work; an agreement or memorandum of understanding would be required between agencies. The Emergency Flood Control Act of 1955 (Public Law 84-99) could be an authorization under the phrase "in flood fighting." Authorization could also be established by a specific act of Congress.

Project Description

Two separate areas are currently being offered protection by a road or series of roads that are acting as dams and emergency levees:

1. Mission Township Area – approximately 21 square miles of Mission Township within the Spirit Lake Reservation on the southeast side of Devils Lake between Mission Bay and Black Tiger Bay.

2. Acorn Ridge Area – an area south of the city of Devils Lake, west of ND Highway 20, and north of Camp Grafton.

The length of roads currently acting as dams is approximately 7 miles. The roads acting as dams issue originated in 1995 when culverts under those roads were plugged as part of emergency measures to protect existing features. Currently, the difference in water levels on each side of the road is as much as 12 feet. This pressure difference is a potential safety hazard because the roads were not designed to be used as dams.

Three emergency levees and portions of ND Highway 20, BIA Highway 4, and BIA Highway 5 that are acting as dams protect the Mission Township area between Mission

Bay and Black Tiger Bay. Portions of ND Highway 57 and BIA Highway 1 acting as dams protect the area directly south of the intersection of those two highways. The Acorn Ridge area is protected by a section of ND Highway 20 that is acting as a dam. The roads acting as dams, particularly ND Highway 57, ND Highway 20, and BIA Highway 1, are major arterial routes carrying traffic to and through the Mission Township area. By virtue of the roads acting as dams, several square miles of land and several rural structures are protected that would otherwise be inundated.

Roads acting as dams involve acquisition of 20 parcels of allotment land, two parcels of tribal land, one parcel that is both allotment and tribal land, one parcel owned by the State of North Dakota, and two parcels owned by the Federal Government and used as waterfowl production areas. Depending on the local sponsor, there may not be sponsor authority to condemn all landowners, leading to a need for the Corps to exercise its condemnation authority.

The assumed flood protection strategy for each of the areas is as follows:

Mission Township Area

This area would be protected by a series of levees designated on Figure 5-50 as Levees 25A through 25J. Levee 25A would be constructed adjacent to the embankments of BIA Highways 4 and 5 on the landward side and use those embankments for cofferdams on the lakeside. Construction would require temporary cofferdam construction on the landward side where water currently inundates the levee foundation area. Levees 25B, C, and G would be constructed adjacent to and on the landward side of the emergency levees in those areas. A cofferdam was assumed to be required on the landward side of Levee 25G. Levees 25D, E, and F are freeboard levees (base elevation is above the design lake level and height of the levee only provides freeboard protection); therefore, they can be constructed without cofferdams. A cofferdam was assumed to be required on both the landward side and lakeside of Levees 25I and 25J. Equalization culverts would be placed through ND Highway 20 and BIA Highways 4 and 5 to prevent those roadway embankments from acting as levees.

Acorn Ridge Area

This area would be protected by a levee constructed parallel to the portion of ND Highway 20 currently acting as a dam. Levee 25K would be constructed adjacent to the road embankment on the landward side and use that embankment for a cofferdam on the lakeside. Construction would require temporary cofferdam construction on the landward side where water currently inundates the levee foundation area.

Sponsor-Owned Lands, Easement, Rights-of-Way (LER)

Sponsors for this segment have not been identified. The North Dakota Department of Transportation (NDDOT) is responsible for maintaining ND Highways 57 and 20. The US Department of Interior, Bureau of Indian Affairs, is responsible for managing and

maintaining BIA Highways 1, 4, 5, 9, and 6. Parts of the lands necessary for this segment are within road right-of-way. In accordance with the Uniform Appraisal Standards for Federal Land Acquisitions, this LER would be assigned a value of $0 and credit given accordingly. Two parts are within land owned by the State of North Dakota (Levees 25H and K).

Estates

It is anticipated that the standard fee, flood protection levee easement, flowage easement (occasional flooding), and temporary work area easement would be used for this feature. There are 166.71 acres identified for levee easement. Ponding areas are 3,335.07 acres, which are anticipated to be acquired in occasional flowage easement. Mitigation areas of 6,789 acres are proposed to be acquired in fee. Temporary work area easements have not yet been identified. It is expected that temporary work areas can be accommodated within the identified right-of-way because of the generous width of the right-of-way corridors. The wording of the standard estates is included in Figure 7-1.

Existing Federal Project

The Mission Township Area of the project is located within the borders of the Spirit Lake Nation Reservation.

Federally Owned Lands

Some of the roads acting as dams are located within the Spirit Lake Nation Indian Reservation. Roads acting as dams involve acquisition of two parcels of tribal land, one parcel that is both allotment and tribal land, and two parcels owned by the Federal Government and used as waterfowl production areas. It is possible that an act of Congress would be necessary to obtain permission to use the tribal land parcels.

The route requires acquisition of approximately 221.46 acres of lands encumbered with Federal easements for waterfowl management. The USFWS manages this interest for waterfowl production. Project features are being coordinated with the USFWS to determine compatibility. Costs for these areas have been identified within the cost sheets; Barr Engineering and the Real Estate Division of the St. Paul District Corps of Engineers developed these cost estimates. Specific areas for mitigation have not been identified to date. Numbers of acres and types of land necessary were provided, and costs were estimated from that information.

In the matter of ownership of the bed of Devils Lake, fee title to the bed of the lake, up to the ambulatory ordinary high water mark (OHWM), passed to the United States by Deed dated 7 July 1971 from the Garrison Diversion Conservancy District (as authorized by the North Dakota State Legislature). While there has been some controversy or question as to (1) the navigability of Devils Lake (in fact, and/or as navigable waters of the United States), (2) whether the OHWM that was the demarcation line between submerged lands and adjoining fast lands, the title to which submerged lands passed to the State upon

admission to statehood (under the Equal Footing Doctrine) was static (set at the then "meander line") or ambulatory (rising and falling over time in accordance with the doctrines of reliction and submergence, as well as accretion and erosion), (3) whether recorded changes in the levels of Devils Lake were caused by forces of reliction or avulsion, (4) whether statutory and/or common law principal of adverse possession (vis-a-vis littoral/riparian landowners vs State) together with acknowledged default of State to appear in 1920's-era quiet title actions buttressed riparian/littoral landowners ownership claims regardless of answers to issues in 1 through 3 above, and/or stopped the State (and/or its grantee, the United States) from asserting a defense/claim to ownership of some parts of presently submerged lake bed, and (5) if North Dakota Century Code, Section 47-01-15, supersedes common law and case law (and conflicting statutes) as to whether ownership of littoral/riparian owners extends to ordinary low water mark (OLWM) or OHWM. Nevertheless, all things considered, the attorney's opinion determined, based upon a review of necessary and available fact, circumstance, statute and case law, that fee ownership of the bed of Devils Lake is presently duly vested in the United States up to the ambulatory OHWM from time to time, excepting only some apparently inchoate, concurrent right or license of littoral owners to OLWM under NDCC 47-01-15 (The Court in In re Ownership of Bed of Devils Lake, 423 N.W.2d 141 [N.D. 1988] noted, in dicta, that "...it is not entirely clear from the language of the North Dakota statute whether it grants upland owners title or only license or easement down to the OLWM..." but in any case found it unnecessary to decide inasmuch as it found the reliction and submergence doctrines to the OHWM controlling).

Navigational Servitude

It is the opinion of the St. Paul District Real Estate Attorney-Advisor that Devils Lake is not subject to the so-called "navigable or navigation servitude" accruing to the United States of America under the Commerce Clause of the U.S. Constitution and/or Section 10 of the River and Harbors Act of 1899 (as amended). It is his further conclusion that the legal definition of "navigable waters of the United States" (as such term is used in the River and Harbors Act of 1899, enunciated in a long line of case law up to and including National Wildlife Federation v. Alexander, 613 F2d. 1054 [DC Cir. 1979] and adopted by most major treatises on the subject), clearly does not contemplate or encompass a wholly intrastate body of water such as Devils Lake, which does not by itself or in connection with other such bodies form an uninterrupted water highway crossing State lines. While, as the case law makes clear, Congress has the power to reach *all waters* that may be used in, or the use of which can affect, interstate commerce, the Courts have determined that Section 10 of the River and Harbors Act of 1899 (as amended) did not extend that power to all "navigable waters," rather only to such navigable water which by itself or in connection with other such bodies form an uninterrupted water highway crossing State lines. Thus, while Devils Lake was and is "navigable in fact" under definition for purposes such as determination of ownership of the bed of the lake under the Equal Footing Doctrine and for State public use purposes, it is apparently not a "navigable water of the United States" for the purposes and under the intent of Section 10 of the River and Harbors Act of 1899 (as amended).

Map

A map of this segment can be found at Figure 5-50.

Induced Flooding

As the roads acting as dams have been raised and the size of the area protected by these roads acting as dams has increased, the likelihood that these actions may induce flooding has also increased. Some preliminary work has been done in an attempt to identify what, if any, effect the roads acting as dams may have in regard to lake levels. At this time, there are some indications that the roads acting as dams might be contributing to slightly higher lake elevations; however, studies have not been done in enough detail to identify the magnitude of stage increases or the area affected. As studies progress and the longer-term changes in the lake resulting from natural causes can be monitored and assessed, it will be necessary to examine the data generated and the conclusions reached to determine if changes in lake levels, if any, caused by the roads acting as dams result in a situation where induced flooding, if any, would require compensation of affected landowners.

Baseline Cost Estimate

The baseline cost estimate is $476,000 for the feature costs and $2,651,000 for the mitigation areas. The feature has an estimated 52 owners, including the State of North Dakota and the Devils Lake Sioux tribe (Spirit Lake Nation).

	Total
Lands/damages	$1,851,633
Contingencies	462,917
RE Admin. costs	650,415
Contingencies	162,035
Total	3,127,000

Public Law 91-646 Residence/Business Relocations

Barr Engineering identified six residences, two barns, and seven sheds for relocation in the Mission Township area of the project. They also identified one shed for relocation in the Acorn Ridge segment. Barr Engineering developed the cost estimate for these relocations based on the actual costs of previous FEMA relocations in the Devils Lake basin, information from the FEMA infrastructure database (October 2002), and information provided by the Director of Tax Equalization for Ramsey County, North Dakota. The relocation estimate, dated January 10, 2003 by Barr Engineering, is $1,337,000.

Mineral Activity

No known mineral deposits are located within or adjacent to the proposed project.

Sponsor Assessment

This study has not progressed to the point of determining if this would be a sponsor project. Therefore, a sponsor assessment has not been completed.

Zoning

No application or enactment of zoning ordinances is anticipated for the proposed project.

Acquisition Schedule

This study has not progressed to the point where an acquisition schedule could be developed. An advance acquisition letter will be provided to the project sponsor (if and when identified) if initiation of advance acquisition is contemplated.

Facility/Utility Relocations

This study did not identify any relocations of facilities or utilities. If any were to be identified in later planning/design stages, an Attorney's Opinion of Compensability would be prepared.

Environmental Clearance

This study has not progressed to the point where environmental investigations are warranted. A preliminary examination identified 27 potential HTRW sites within the general area (Figure 5-50). If the study were to progress, appropriate environmental, cultural, and HTRW investigations would need to be undertaken to meet NEPA requirements before any project could be authorized and constructed.

Landowners

Although this expanded infrastructure feature (roads acting as dams) would more safely protect lands threatened by the flooding of Devils Lake, formalizing this arrangement with permanent government interests may not be viewed favorably by all landowners. It has not been possible to hold public meetings to determine landowner acceptability for this feature. Additional government ownership or non-native ownership of lands within the reservation boundaries is always a controversial issue. Even with the benefits of protection of lands and structures, landowner resistance may be encountered with such a feature.

8 PUBLIC INVOLVEMENT, REVIEW, CONSULTATION

This study has been coordinated with the public, local, State, Provincial, and Federal agencies, the Spirit Lake Tribe, and other interested parties. Initial scoping meetings were held in 1998. Supplemental public scoping meetings were held in April 2001 to help identify alternatives, as well as any concerns and issues associated with the alternatives that were new or different from those identified during the initial scoping process. A series of five public meetings was held in October 2001 to update the public on the initial findings and to seek comments on considerations for identifying the "preliminarily selected outlet plan" that was being carried forward into the design phase. Another series of four public meetings was held in April 2002 following the release of the Draft Integrated Planning Report/EIS to update the public on the findings in the draft report, to respond to questions and to hear comments.

Newsletters were provided to a mailing list of approximately 1,500 interests in March, September, and December 2001, and March 2002. These four newsletters provided an update of the study progress, announced upcoming meetings, and furnished results of past meetings.

Representatives from key agencies that were in the best position to provide technical input were invited to participate in the study. These points of contact have helped evaluate needed studies and consideration of alternatives, but their role was not to represent the position of the agency, but to make the Corps aware of available technical data and present their individual concerns to the Corps and to their agency. Agencies that named a representative to this technical group include the following:

U.S. Geological Survey
Environmental Protection Agency
U.S. Fish and Wildlife Service
U.S. Forest Service
Federal Emergency Management Agency
Bureau of Indian Affairs
North Dakota State Water Commission
North Dakota Department of Health
North Dakota Game and Fish Department
Minnesota Department of Natural Resources
Minnesota Pollution Control Agency
Minnesota Department of Health
Manitoba Conservation Department
Environment Canada
Canadian Department of Fisheries and Oceans
Spirit Lake Tribe
Red River Basin Board
Lake Emergency Management Committee
Barnes County Emergency Management Office

Besides involving the 19 agency technical representatives in the study and the formal National Environmental Policy Act (NEPA) scoping process, the following means for involving the public were used:

- Internet Website with status report
- News releases
- Meetings with agencies and interested groups, as needed

Cooperative Agency Agreements have been signed by the following agencies:

- Environmental Protection Agency
- North Dakota State Water Commission
- Bureau of Indian Affairs

This project has a high interest level by the Spirit Lake Tribe (of the Dakota Indian Tribe) since its reservation is bounded on the north by Devils Lake and on the south by the Sheyenne River. The Tribe is among those being adversely affected by flooding. Some of the considered outlet routes are at least partially located within the reservation, and outlet releases into the Sheyenne River could have water quality, flooding, and streambank erosion impacts and other potential project impacts. Over the past several years, the Corps has been coordinating with the tribe on flooding, as well as on the potential solutions to it. A liaison between the tribe and the Corps has been used to bridge cultural differences and to provide for more effective communication.

The Army is working with the Department of State to ensure that the requirements of the Boundary Waters Treaty of 1909 are met. Section 207 of Public Law 107-206 authorized the Corps to provide funds to the United States Section of the IJC for the purpose of conducting investigations, undertaking studies and preparing reports in connection with a Reference to the IJC under Article IX of the BWT for an emergency outlet for Devils Lake, North Dakota. Pursuant to that authority the Corps transferred funds in the amount of $500,000 to the IJC's U.S. Section in September 2002. The study team has also worked with technical representatives from Canada to evaluate matters that must be addressed to comply with the requirements and intent of the Boundary Waters Treaty of 1909 as part of the NEPA process.

SCOPING

This section of the report summarizes the scoping process used. It defines the scoping process and describes the major vehicles used to coordinate the study.

An EIS is a written document required by NEPA to be prepared for “major federal actions significantly affecting the quality of the human environment.” Major Federal actions are defined in the regulations implementing NEPA as actions “with effects that may be major and which are potentially subject to Federal control and responsibility” (40 CFR 1508.18). An EIS describes the purpose and need for an action, any alternatives that were considered in detail (including no action), the nature of the environment to be affected, and the nature and significance of the environmental effects of a proposed

action and alternatives. Mitigation measures must also be described for any effects the agency determines to be significant under the standards set in the regulations. Scoping is a vital part of the NEPA process, and is one of the first steps undertaken when planning an EIS.

- It is an "early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action" (40 CFR 1501.7).

- It provides agencies with a method to determine the scope of analysis in an EIS, meaning the nature of the actions, the alternatives, and the impacts to be analyzed.

- It helps agencies to "identify and eliminate from detailed study the issues which are not significant or which have been covered by prior environmental review" (40 CFR 1501.7).

- It involves Federal, State, and local agencies, affected Indian tribes, the proponent of an action, and other interested persons (40 CFR 1501.7).

- It is one of the 17 methods of reducing excess paperwork, and one of the 12 methods for reducing delay, as outlined in the regulations implementing NEPA (40 CFR 1500.4 and 1500.5).

Scoping for an EIS officially begins with publication in the Federal Register of a Notice of Intent to Prepare an EIS. This is the first public notice that an agency is intending to prepare an EIS; the Notice of Intent for the Devils Lake Emergency Outlet EIS was published on October 21, 1997. As a result of changes to the project and purpose and need for the action, a revised Notice of Intent to prepare an EIS was published in the Federal Register on December 22, 2000.

No standard format for scoping exists. Agencies have wide discretion in conducting scoping, as long as they get the results needed to continue the NEPA process. The Corps chose to hold a series of meetings with other agencies and officials, the Spirit Lake Tribe, and the public. In addition, written comments were solicited through the Federal Register notice, announcements in local media, the Corps and the North Dakota State Water Commission (NDSWC) Web pages, at each meeting, and in the draft Scoping Document.

For a complex project such as the Devils Lake Study, it is important to define at the outset what specific environmental studies need to be reviewed or conducted before a decision is made. This document, based on oral and written input from Federal, State, and local agencies, the Spirit Lake Tribe, and other interested persons, describes the scope of actions, alternatives, and impacts to be studied, and identifies the significant environmental issues that will be addressed in detail, as well as those that are not significant or that have been covered elsewhere.

Because the Scoping Document is also a part of the public NEPA process for this project, public comments were solicited on the draft Scoping Document (June 1998). Comments received during the draft Scoping Document Public Comment period were addressed in the February 1999 Scoping Document. A Supplemental Scoping Document was prepared in July 2001 after the Revised Notice of Intent was published.

Input analyzed for the Scoping Documents came from the following sources:

1. Meetings with Federal, State, and local agencies, the Spirit Lake Tribe and other entities, including Canada.
2. A series of seven public meetings held in March 1998.
3. Written comments submitted by agencies, organizations, nations, and the interested public.
4. Comments on the 1998 draft Scoping Document.
5. A series of six public meetings held in April 2001.
6. A series of five public meetings held in October 2001.
7. A series of four public meetings held in April 2002.

DISTRIBUTION OF THE DRAFT INTEGRATED PLANNING REPORT/EIS

The draft Integrated Planning Report/Environmental Impact Statement was filed with the Environmental Protection Agency, and a 45-day public review notice was published in the Federal Register on March 8, 2002. The comment period was extended an additional 15 days and a notice sent to the entire mailing list. The draft Integrated Planning Report/Environmental Impact Statement was distributed to everyone on the mailing list. The mailing list is reproduced in Appendix 3 of Volume 1 of this report. Public meetings on the draft report were held 8-10 April 2002. Comments received on the draft Planning Report/EIS were used in the preparation of the Final Integrated Planning Report/EIS. Coordination with appropriate agencies, groups, and the public will continue throughout the study process. Comments received on the draft report are reproduced in Appendix 4 of Volume 1 of this report. These comments and Corps responses are summarized in Appendix 5 of Volume 1 of this report.

RECOMMENDATIONS FROM FISH AND WILDLIFE COORDINATION ACT REPORTS

The following is a list of the recommendations made by the U.S. Fish and Wildlife Service in their June 2002 final and March 2003 supplemental Coordination Act Reports. "The Service advises that the Corps implement the following recommendations in order to protect fish and wildlife resources in the project area." The recommendations are listed individually followed by the Corps responses in *italics* designated by an *R*. Some of the U.S. Fish and Wildlife Service recommendations are outside the purview of the Corps of Engineers. The recommendations from the Coordination Act Reports have been coordinated with the North Dakota Game and Fish Department. The Service has indicated that they reserve the right to provide further comments and recommendations

after they have had sufficient time for a thorough review of the preferred alternative presented in the Corps' Integrated Report.

Recommendations from June 2002 Coordination Act Report

Operating Recommendations

1. **Develop an outlet operation plan with interagency involvement.** To date, no operation plan has been developed for an outlet. Before an outlet is constructed, an interagency advisory team should develop and approve an operational plan.

   R. Although the framework for an operational plan for the preliminarily selected outlet plan has been analyzed, further refinements may be required. These refinements may not be developed and fully coordinated prior to construction. An outlet operating committee would be formed to monitor outlet operation, make recommendations on changes as deemed necessary, evaluate the long-term monitoring studies, and make recommendations on mitigation needs. The committee would be composed of various State and Federal agencies and affected interests.

2. **Configure an operational plan that addresses the future viability of Devils Lake's natural resources and minimizes downstream environmental impacts.** The Pelican Lake outlet plan, operating at 300 cfs, will pump the lake's freshest inflow to the Sheyenne River in an effort to minimize water quality impacts. However, this will increase the water quality degradation in Devils Lake, thereby hastening the decline of the lake's resources due to water quality degradation. While the Pelican Lake plan minimizes downstream water quality impacts, recent studies show that erosion and sedimentation are likely to increase downstream on the Sheyenne River.

   R. Mitigation features have been included in the outlet plan to alleviate environmental effects. If the Pelican Lake 300-cfs outlet or other outlet is subsequently authorized for construction, supplemental EIS documentation would be prepared as needed. Should an outlet be authorized for construction, an operating organization represented by the State of ND, MN, COE, FWS, State Department, EPA, and the Spirit Lake Tribe should be considered to make the detailed operating and mitigation decisions required. See response to Recommendation 1 above.

3. **Establish an operational Devils Lake level at or above 1443.0 msl.** The Service recommends that elevation 1443 msl be established as a target elevation for Devils Lake to minimize effects to the lake and impacts to the Sheyenne River. Once pumping or natural drawdown brings the lake to this elevation, all pumping would cease. This provides approximately

380,000 acre-feet of storage between 1443 msl and 1446.5 msl (the overflow to Stump Lake). With Stump Lake at approximately 1422.0 msl, there is approximately 371,155 acre-feet of storage to elevation 1446.5 msl. Therefore, with the lake at 1443 msl, there would be approximately 751,155 acre-feet of storage below 1446.5, in both Devils Lake and Stump Lake. Additionally, this elevation is consistent with the Service's state-approved water rights for Lake Alice National Wildlife Refuge, and allows for some measure of wildlife management at the refuge. Establishing the operating level at or above 1443 msl also provides for the long-term health of the Devils Lake fishery.

R. The analysis in the report has been modified and assumes the lake would be drawn down to 1443. The State Governor's office, the State Water Commission, local interests at Devils Lake, and the Congressional Delegation all have indicated that it is no longer the purpose of the project to draw the lake down. They have indicated that a higher operating level would be acceptable.

MINIMIZE INFLOW TO THE LAKE WHILE MAXIMIZING UPPER BASIN STORAGE POTENTIAL

4. **Include in the project plan the sponsor's proposal for restoration and creation of storage in the watershed as part of the three-legged stool solution to managing the rise of Devils Lake.** Along with an outlet and infrastructure protection, wetland restoration and other means of holding water on the landscape are essential to resolving the effects of the rising water level in Devils Lake. The Corps should identify all agencies that have authority to work on water storage and assist them in seeking ways to increase water storage. The Service recommends establishing at least 50,000 acre-feet of new storage in the Devils Lake upper basin.

   R. Infrastructure protection and upper basin storage are included in the framework for the general conclusion of the report. Infrastructure protection is the most prudent feature to implement to address the rising lake levels. Other features may be warranted as conditions change. Corps studies have identified over 120,000 acre-feet of potential storage in depressions in the upper basin. For purposes of analysis, the Corps assumed that about one-half of this storage could effectively be developed to provide some measure of lake level reduction and to provide significant benefits to wildlife resources. The State, other Federal, or other agencies could completely or partially implement this feature. The Corps has not been authorized to pursue upper basin storage at this time. The conclusions of the draft report indicate that an outlet, infrastructure protection, and upper basin storage may all have merit under certain conditions. Many of the measures shown to be economically justified are the responsibility of other Federal or State agencies. Therefore, it is

recommended that the interagency task force be reactivated to develop a master plan, tied to target lake elevations, for other measures needed in the basin and to seek commitments for action from each of the agencies.

5. **Moratorium on new wetland drainage and pumping within the basin for the life of the project.** The Service recommends that the Corps coordinate with the State to ensure that any plans to remove water from the landscape and place it into the lake through wetland drainage or pumping be postponed during the life of the project to avoid the need to move additional water downstream. Taking precautions to prevent further aggravating factors such as wetland drainage and pumping from increasing lake levels is consistent with the goal of the outlet to reduce lake levels and prevent a natural overflow of Devils Lake to the Sheyenne River.

   R. The Corps concurs that controls on future wetland drainage in the upper basin would improve the effectiveness of other features. The decision to place a moratorium on future drainage is under the control of the State. The PCA includes requirements that the non-Federal sponsor comply with requirements of Section 402c of the Water Resources Development Act of 1986, which requires the non-federal interests to preserve the level of protection that is provided by the project. Whether the sponsor is to maintain the level of protection that is provided by the project to include a moratorium on any new drainage permits in the upper basin will be determined during development of the PCA.

6. **Continued work on the WEST study.** The Service recommends that additional work be conducted on the WEST study, as suggested and supported by WEST's conclusions, before selecting any outlet plan as the preferred alternative. The additional work is necessary to refine this important data for use in the proper development of the upper basin storage portion of the project. In order to obtain the best possible information to use for depressional storage modeling, the Service recommends that a complete re-photo interpretation of the Devils Lake basin be completed. Numerous studies have consistently concluded that the most accurate and reliable way to obtain drained wetland data is to photo interpret it from high-altitude color infrared aerial photography. The new delineations could then be digitized and made available for subsequent modeling efforts.

   R. The WEST study identified several additional actions that could be taken to improve the results of the study, including additional interpretation of past and present aerial photography to better define restorable wetland basins. The Report/EIS concludes that further analysis appears warranted to optimize the most cost-effective plan for upper basin storage as a complementary project feature. This analysis should be

conducted if upper basin storage is pursued. However, it is a separate action and may not be conducted prior to any action related to an outlet.

7. **Moratorium on all existing drainage maintenance that increases volume, peak, or duration of flow.** Management of existing projects that seek to add more water to Devils Lake faster should be postponed or minimized during the life of the project. A basin-wide water management plan should be developed in order to effectively manage the flow of water to Devils Lake. An operational procedure to hold water on the landscape, much like the "waffle plan" designed by the Energy & Environmental Research Center's approach to attenuate flood peaks, should be explored and implemented as part of a holistic approach to basin water management.

   R. As stated in the Report/EIS, a basin-wide plan is not within the scope of this study and was not authorized by the legislation. The Corps concurs that a basin-wide water management plan would improve the effectiveness of other features. The Corps also feels that alternative farming practices would improve the effectiveness of other features. If pursued, implementation of such features would be the responsibility of other agencies or interests. See response to Recommendations 4 and 5.

8. **Close all unauthorized drainage and cease all unauthorized pumping.** The State Engineer has estimated that approximately 3 percent of all wetland drains in the basin are operating illegally. The Service recommends that these drains be closed to prevent the unauthorized drainage of wetlands adding to the problem of high lake levels in Devils Lake.

   R. The Corps concurs that closing unauthorized drains in the upper basin would improve the effectiveness of other features. It is the Corps' understanding that the State has investigated and legalized all previous drainage and has determined illegal drains no longer exist. The State has the authority to regulate past and future drainage.

9. **Monitor wetland loss within the basin.** The Service is concerned that with an operational outlet comes the social demand to use it to its maximum capacity. With this in mind, the Service is concerned that additional pressure to drain wetlands will be placed on the existing wetland base within the basin. Therefore, a monitoring plan should be established to track the security of water storage.

   R. Wetland drainage is currently monitored by the Service and other agencies. If upper basin storage is pursued or a moratorium on wetland drainage is implemented, the Corps concurs that development of a monitoring plan should be part of these features. See response to Recommendation 5.

10. **Maximize the use of public lands in the upper basin for multi-purpose functions.** The Corps and the State should assist agencies and organizations in obtaining necessary permits for storage projects that include public lands.

    R. See response to Recommendation 4.

General Recommendations

11. **Develop monitoring plans for environmental impacts associated with the operation of the Devils Lake outlet.** The plans should include the monitoring of impacts to fish and wildlife resources and habitats within the Devils Lake basin, Devils Lake, and the Sheyenne and Red Rivers and their associated habitats. Specifically, monitoring plans should include, but not be limited to, water quality, riparian vegetation, fish and mussel survey, erosion and sedimentation, in-lake effects to the fishery of Devils Lake, and monitoring the progress of upper basin storage of water.

    R. Additional mitigation and monitoring plans have been investigated and identified in the Report. Because of the uncertainty and difficulty quantifying effects and the possibility of variable operating plans, monitoring would be required. A potential framework for implementation of the monitoring has been identified in the Final IPR/EIS, but the specifics of how monitoring would be accomplished have not yet been identified. A possible implementation schedule has been suggested in Appendix C. Supplemental EIS documentation may be required if project modifications are identified.

12. **If the Corps proceeds with an outlet project, the Service recommends that the Corps select an alternative that results in the least amount of environmental damage to the Sheyenne and Red Rivers, Devils Lake, and their habitats.** The Corps should apply an environmentally sensitive operational plan to the Pelican Lake 300-cfs outlet plan to pump the freshest water to the Sheyenne River, while maximizing Devils Lake's resources, and making maximum use of upper basin storage opportunities to reduce inflow to the lake.

    R. Additional authorization would be needed for the Corps to construct an outlet. The Corps of Engineers has been directed by Congress to conduct preconstruction engineering and design for an outlet from Devils Lake to the Sheyenne River. On the basis of studies and coordination, the Pelican Lake 300 cfs outlet alternative was determined to be the best outlet plan to meet the purpose and objectives of the project. The results of this work have indicated that water quality and total project costs are determining factors in identifying an outlet plan to design. The Pelican Lake 300 cfs outlet constrained for 300-mg/l sulfate and channel capacity

on the Sheyenne River (600cfs) is the best outlet plan addressing these criteria.

13. **Obtain Service permits and establish wetland exchange and mitigation prior to the start of construction.** All wetland easements and fee-title land interests administered by the Service have been provided to the Corps in a digital format. If easement wetlands or fee-title property are affected, please contact Mr. Roger Hollevoet, Project Leader, Devils Lake Wetland Management District, at 701-662-8611, to determine appropriate permit and conditions. The Service recommends that all wetland impacts should be mitigated on an acre-for-acre basis. Unavoidable impacts to woody vegetation should be replaced on a 2:1 basis.

    R. The outlet route and project features such as the Dry Lake Diversion may affect some Service properties. The selected outlet alignment and project features will be coordinated with the Service offices in Bismarck and Devils Lake to determine compatibility and obtain necessary permits.

14. **Include the State of North Dakota's stated intent to construct an outlet to the "Future Without the Project" conditions.** The State has started this process in the contracting of the design phase of their outlet to an engineering firm in Bismarck. They have stated their intent to move ahead in the construction phase of their outlet in the event that a Corps outlet project is not forthcoming. This commitment must be included to accurately reflect the future without condition.

    R. The construction and operation of a temporary outlet is not considered to be a reasonably foreseeable action at this time, and the Corps is not including this outlet in the future without-project conditions. The Corps did perform a sensitivity analysis to evaluate the potential effects of the temporary outlet on lake levels and economic feasibility. This analysis is presented in Chapter 6 of the report.

15. **Post-project monitoring of the Sheyenne River for western prairie fringed orchid impacts if an outlet greater than 300 cfs is constructed.** The Service recommends a plan be established to monitor the Devils Lake outlet operations and its impact on the water table of the Sheyenne River and western prairie fringed orchid habitat on the Sheyenne National Grasslands and in Richland and Ransom Counties if an outlet greater than 300-cfs is constructed. The Service previously raised concerns over a 300 cfs outlet and its impact on the water table in orchid habitat. Upon completion of a Barr Engineering study, the Service concurred with the Corps' determination that the proposed 300-cfs outlet is not likely to adversely affect listed species. However, if an outlet with a greater pumping capacity (e.g., one of the several 480-cfs alternatives) is selected,

the Service will request a study be conducted to determine the potential impact that alternative will have on the western prairie fringed orchid.

R. If a discharge greater than 300 cfs is considered, additional groundwater studies would be conducted to determine potential effects on the western prairie fringed orchid and the results coordinated with the Service.

16. **The Corps should dismiss the "wall of water" theory surrounding an overflow event from Devils Lake to the Sheyenne River.** The Corps should dismiss the popular notion that there will be a wall of water cascading down the Tolna Coulee in the event Devils Lake should ever rise to its overflow of 1460 msl. No scientific data that suggest a "wall of water" will downcut the Tolna Coulee in case the lake ever overflowed. Furthermore, the Federal Register notice of December 22, 2000, states that measures at the natural overflow point would be taken to minimize erosion.

    The Service wrote a Planning Aid Letter, dated May 25, 1999, providing input on the potential natural resource impacts of an overflow from Devils Lake to the Sheyenne River through the Tolna Coulee. The report evaluated Corps data that documented predicted flow projections for the 6-year and standard project flood (SPF) outflow. It was shown that despite the significant inflow to the lake, the flow projections demonstrate that evaporation from the lake's surface area will have a dramatic effect in limiting the amount and peak flow of water that could outflow from the basin.

    The 6-year outflow showed that the maximum flow out of the basin within the first 24 months was in month 18, with a maximum outflow of 80 cfs, with a 24-month average of 61 cfs. The SPF outflow showed a maximum of 1196 cfs in month 6, with a 24-month average of 463 cfs.

    R. The future without project condition assumes that if the lake overflows, actions would be taken to minimize erosion of the natural outlet. Taking action to minimize downstream damages seems reasonable in light of the actions that have been taken in the basin to minimize damages due to rising lake levels. Under the stochastic analysis, the amount, duration, and peak flow vary depending on the overflow trace. As a sensitivity, the Corps also evaluated a scenario with the assumption that substantial erosion, down to elevation 1450, would occur with an overflow event. This scenario analysis is being presented to allow decision-makers to bracket possible futures. Additional discussion has been added to the summary at the beginning of the report describing the risks associated with a natural overflow.

17. **Fish entrainment and fish screen.** The Service recommends that any pump intake be designed to pump at or less than 0.5 fps, with a 0.25-in. mesh fish screen to minimize concerns for impingement and entrainment of fish into the intake.

    R. A sand filter has been added as a project feature (currently incorporated into the design of the regulation reservoir). The sand filter would prevent the transfer of any fish or biota larger than 2 microns to the Sheyenne River. A screen is also included as part of the pump station design to prevent larger organisms leaving Devils Lake.

18. **The Service recommends that the Corps use the stochastic method, as outlined in the Corps of Engineers Principles and Guidelines, to determine project effectiveness, as this method provides the most defensible analysis.** All outlet alternatives should use the standard stochastic approach to evaluate the economic feasibility of the project. Creating hydrologic data, as in the "wet future" scenario, does not seem to comply with the standard Corps guidelines. Repeating the wettest 7 years in recorded history back-to-back until the lake spills out of the basin seems to be a manufactured attempt to create a disaster large enough to justify the project. If a "what-if" scenario is desirable, perhaps the moderate futures of 1450 msl or 1455 msl would be more likely.

    R. The Corps of Engineers traditionally recommends plans that show the greatest expected net benefits, where benefits exceed costs based on the probability of events. As a standard process under the Principles and Guidelines, this is referred to as the National Economic Development, or NED, plan. A stochastic approach was used to determine whether any of the outlet plans met that criterion, and a stochastic approach was used for economic evaluation. The stochastic modeling was based on an assumption of the stationarity of the climate. Because of the uncertainty of and the differing scientific opinions regarding future climatic conditions in the Devils Lake basin, a scenario-based analysis was also performed. In situations of uncertainty, the Principles and Guidelines allow for development of alternative future conditions, or scenarios, as part of a sensitivity analysis. This scenario-based analysis was used to specifically address potential solutions to the problems in the basin if the recent wet conditions continue. Based on criteria for proceeding to construction as contained in the Principles and Guidelines and Energy and Water Development Appropriations Acts for Fiscal Years 1998, 1999, 2000, and 2001, not all the requirements can be met with an outlet. The economic data and analysis show that an outlet is not economically justified using methods that determine net benefits by producing probability-weighted benefits and costs. Additional authorization would be needed for the Corps to construct an outlet.

Recommendations from the March 2003 Supplemental Coordination Act Report

The Service provides the following recommendations to protect and enhance fish and wildlife resources in the project area.

1. **Wherever feasible, use bank stabilization alternatives that work with the natural river system and are more environmentally compatible than traditional rock riprap.** Stabilization techniques may include vegetation plantings, soil bioengineering, tree revetments, root wads, log crib structures, sloping of streambanks, and structures that mimic natural stream channel features. Installation of these types of stabilization measures can reduce erosion, while providing fish and wildlife habitat.

   R. For cost estimating purposes, it was assumed that an equal amount of riprap, bioengineering, retaining walls, vanes, and cribbing would be utilized. The techniques implemented in any given area would be dependent on site-specific conditions and would be determined at the time of design. An effort would be made to use environmentally preferred alternatives.

2. **Take steps to ensure that fish passage is not restricted.** If proposed earthen diversion dams are constructed, use fish ladders, slot weirs, rock slope fishways, and/or low-flow channels to allow fish movement past the dams. Allow upstream and downstream movement of fish past barriers where feasible. Locate and design fish passage structures or features to accommodate different aquatic species and age classes to the extent possible. Remove dams and restore channel habitats at the end of the project life.

   R. The purpose of the bypass channels is for the maintenance of critical channel habitats in selected reaches of the Sheyenne River. The intent of the features is to maintain some aquatic habitat and help the recovery of the system after outlet operation by maintaining sources for recolonization. The structures would be designed to allow for fish passage to the extent possible. At the end of the project life or if it is determined that the outlet would not be operated anymore, removal of structures in the natural river channel could be considered.

3. **Minimize impacts to existing resources and mitigate for all unavoidable impacts to wetlands and woody vegetation.** Minimize vegetation removal and restore disturbed areas with native plants. Coordinate with State and Federal agencies, such as Natural Resource Conservation Service and the Fish and Wildlife Service, to develop a native plant species list. Replace all wetland losses with restored, created, or preserved wetlands on a value-for-value basis. This may require replacement/enhancement on a minimum 2:1 basis. Acquisition/preservation will require a higher ratio, in the neighborhood of 6:1.

Preserve the existing trees and shrubs to the extent possible. Replace unavoidable losses of trees and shrubs with native species on a 2:1 basis.

R. Impacts have been avoided to the extent possible in project design by including features such as shifts in alignment, maximum use of buried pipeline, a Pelican Lake constrained outlet operation, erosion protection, ramping of flows, long-term monitoring, a sand filter, and riprap at low head dams. Limited short-term construction effects are anticipated along the outlet route, and no specific separable mitigation features have been included. Downstream effects to terrestrial and aquatic resources have been assessed and mitigation features identified. These features include acquisition and management of 6,000 acres of riparian lands for terrestrial effects and construction of high flow bypass channels to maintain some aquatic habitats. Other disturbed areas would be revegetated with native species. Long-term monitoring is included to evaluate the effectiveness of the mitigation measures and to assess the need for additional measures.

Recommendations 4-14 were adequately addressed by the Corps in the draft IPR/EIS and are reiterated here to emphasize the Service position that upper basin storage and watershed management should be a significant component of any comprehensive flood control plan for the Devils Lake Basin.

4. **Obtain Service compatibility determination, obtain the necessary permits and establish wetland exchange and mitigation prior to the start of construction.** All wetland easements and fee-title land interests administered by the Service have been provided to the Corps in a digital format. If easement wetlands or fee-title property are impacted, please contact Mr. Roger Hollevoet, Project Leader, Devils Lake Wetland Management District at 701-662-8611, to determine appropriate permits and conditions.

   R. The outlet route and project features such as the Dry Lake Diversion may affect some Service properties. The Service will be contacted to identify concerns and coordinate the design effort as the study continues. The selected outlet alignment and project features will be coordinated with the Service offices in Bismarck and Devils Lake to determine compatibility and obtain necessary permits.

5. **Include the sponsors' proposal for restoration and creation of storage in the watershed.** In addition to, or in place of an outlet and infrastructure protection, wetland restoration, and other means of holding water on the landscape should be examined as possible solutions to the rising water level in Devils Lake. The Corps should identify all agencies that have authority to work on water storage and assist them in seeking ways to increase water storage. The Service recommends establishing a minimum of 50,000 acre-feet of new storage in the Devils Lake upper basin.

R. Infrastructure protection and upper basin storage are included in the framework for the general conclusion of the report. Infrastructure protection is the most prudent feature to implement to address the rising lake levels. Other features may be warranted as conditions change. Corps studies have identified over 120,000 acre-feet of potential storage in depressions in the upper basin. For purposes of analysis, the Corps assumed that about one-half of this storage could effectively be developed to provide some measure of lake level reduction and to provide significant benefits to wildlife resources. The State, other Federal, or other agencies could completely or partially implement this feature. The Corps has not been authorized to pursue upper basin storage at this time. The conclusions of the draft report indicate that an outlet, infrastructure protection, and upper basin storage may all have merit under certain conditions. Many of the measures shown to be economically justified are the responsibility of other Federal or State agencies. Therefore, it is recommended that the interagency task force be reactivated to develop a master plan, tied to target lake elevations, for other measures needed in the basin and to seek commitments for action from each of the agencies.

6. **Moratorium on all existing drainage maintenance that increases volume, peak or duration of flow.** Management and maintenance of existing drainage projects, which increase the speed and quantity of runoff to Devils Lake, should be postponed or minimized during the life of the project. Develop a basin-wide water management plan in order to effectively manage the flow of water to Devils Lake.

   R. As stated in the Report/EIS, a basin-wide plan is not within the scope of this study and was not authorized by the legislation. The Corps concurs that a basin-wide water management plan would improve the effectiveness of other features. The Corps also feels that alternative farming practices would improve the effectiveness of other features. If pursued, implementation of such features would be the responsibility of other agencies or interests. See response to Recommendations 5 and 7.

7. **Moratorium on new wetland drainage and pumping within the basin for the life of the project.** The Service recommends that the Corps coordinate with the State to insure that any plans to remove water from the landscape and place it into the lake through wetland drainage or pumping be postponed during the life of the project to avoid the need to move additional water downstream. Taking precautions to prevent further aggravating factors, such as wetland drainage and pumping from increasing lake levels is consistent with the goal of the outlet to reduce lake levels and prevent a natural overflow of Devils Lake to the Sheyenne River.

   R. The Corps concurs that controls on future wetland drainage in the upper basin would improve the effectiveness of other features. The decision to place a moratorium on future drainage is under the control of the State. The PCA

includes requirements that the non-Federal sponsor comply with requirements of Section 402c of the Water Resources Development Act of 1986, which requires the non-Federal interests to preserve the level of protection that is provided by the project. Whether the sponsor is to maintain the level of protection that is provided by the project to include a moratorium on any new drainage permits in the upper basin will be determined during development of the PCA.

8. **Close all unauthorized drainage and cease all unauthorized pumping.** The State Engineer has estimated approximately 3 percent of all wetland drains in the basin are operating illegally. The Service recommends that these drains be closed to prevent the unauthorized drainage of wetlands adding to the problem of high lake levels in Devils Lake.

   R. The Corps concurs that closing unauthorized drains in the upper basin would improve the effectiveness of other features. It is the Corps' understanding that the State has investigated and legalized all previous drainage and has determined illegal drains no longer exist. The State has the authority to regulate past and future drainage.

9. **Monitor wetland loss within the basin.** The Service is concerned that with an operational outlet comes the social demand to use it to its maximum capacity. With this in mind, the Service is concerned that additional pressure to drain wetlands will be placed on the existing wetland base within the basin. Therefore, a monitoring plan should be established to track the security of water storage.

   R. Wetland drainage is currently monitored by the Service and other agencies. If upper basin storage is pursued or a moratorium on wetland drainage is implemented, the Corps concurs that development of a monitoring plan should be part of these features. See response to Recommendation 7.

10. **Maximize the use of public lands in the upper basin for multi-purpose functions.** The Corps and State should assist agencies and organizations in obtaining necessary permits for storage projects that include public lands.

    R. See response to Recommendation 5.

11. **Develop an outlet operation plan with interagency involvement.** To date, no operational plan has been developed for an outlet that includes the Dry Lake Diversion. Before an outlet is constructed, an interagency advisory team should develop and approve an operational plan. This approach will be more productive than having the Corps develop various plan options for resource agency comment.

R. Although the framework for an operational plan for the preliminarily selected outlet plan has been analyzed, further refinements may be required. These refinements may not be developed and fully coordinated prior to construction. An outlet operating committee would be formed to monitor outlet operation, make recommendations on changes as deemed necessary, evaluate the long-term monitoring studies, and make recommendations on mitigation needs. The committee would be composed of various State and Federal agencies and affected interests.

12. **Establish an operational Devils Lake level at or above 1443.0 msl.** The Service recommends that elevation 1443 msl be established as a target elevation for Devils Lake to minimize effects to the lake and impacts to the Sheyenne River. Once pumping or natural draw down brings the lake to this elevation, all pumping would cease. This provides approximately 380,000 acre-feet of storage between 1443 msl and 1446.5 msl (the overflow to Stump Lake). With Stump Lake at approximately 1411.0 msl, there is approximately 371,155 acre-feet of storage to elevation 1446.5 msl. Therefore, with the lake at 1443 msl, there would be approximately 751,155 acre-feet of storage below 1446.5 msl in Devils Lake and Stump Lakes. Additionally, this elevation is consistent with the Service's State-approved water right for Lake Alice National Wildlife Refuge, and allows for some measure of wildlife management at the refuge. Establishing the operating level at or above 1443 msl also provides for the long-term health of the Devils Lake fishery.

    R. The analysis in the report has been modified and assumes the lake would be drawn down to 1443. The State Governor's office, the State Water Commission, local interests at Devils Lake, and the Congressional Delegation all have indicated that it is no longer the purpose of the project to draw the lake down. They have indicated that a higher operating level would be acceptable.

13. **Include the State of North Dakota's intent to construct an outlet to the "Future Without the Project" conditions.** The State has begun construction of an emergency outlet, with site preparation for a pump station near Round Lake. They have demonstrated their intent to move ahead in the construction phase of their outlet in the event that a Corps outlet project is not forthcoming. The Corps has stated in the draft IPR/EIS that if the State began construction of an outlet, the Corps would reevaluate whether to include the State's outlet in their future without condition. Including this commitment is needed to accurately reflect the future without the project condition.

    R. The construction and operation of a temporary outlet is not considered to be a reasonably foreseeable action at this time, and the Corps is not including this outlet in the future without-project conditions. The Corps did perform a sensitivity analysis to evaluate the potential effects of the temporary outlet on lake levels and economic feasibility. This analysis is presented in Chapter 6 of the report.

14. **Continue early interagency coordination as study progresses and project design is finalized.** An interagency planning effort could streamline the planning process and ensure that all agency concerns and recommendations are given adequate consideration prior to submission of draft or final project proposals.

R. A technical work group composed of various Federal, State, Tribal, Canadian, and local representatives was established for the review of study plans and identification of issues and concerns and was coordinated with throughout the study process. In addition, many public meetings were held during the study. This gave opportunities for agencies and the public to provide information and consideration of issues during the study prior to the draft and final reports. There is also opportunity for public review and comment on the final Report. Coordination with interested parties will continue if the study progresses. If an outlet is constructed, an operating committee will be formed to refine the operating plan and evaluate the results of the long-term monitoring. See response to Recommendation 11.

9 VIEWS OF NON-FEDERAL SPONSOR

The following was provided to the St. Paul District Army Corps of Engineers on January 7, 2003:

The State of North Dakota and the State Water Commission support an outlet from the Pelican Lake area of Devils Lake to the Sheyenne River. This is illustrated by the funds that have been appropriated by the Legislature for an outlet and their creation of the Devils Lake Outlet Management Committee, as well as the technical assistance that has been provided to the Corps by Water Commission staff. An outlet is a critical component of the response to the ongoing flood disaster in the Devils Lake area. The Corps' own economic numbers clearly show the tremendous damages that will occur should the lake continue to rise. These economic numbers show the impact on the National level of a continued rise in lake level. The economic impacts to the State and to the Devils Lake region will be much greater than is indicated by the National numbers. In addition, a natural overflow would have economic impacts all along the Sheyenne and Red Rivers. While it is by no means certain that the lake will continue to rise to its natural overflow elevation, since the weather cannot be controlled or even forecast for more than a short time period, it is critical that an outlet be constructed to assist in controlling the lake level.

While the State Water Commission supports the Corps' efforts to develop an outlet from Devils Lake, we do question the cost and necessity of many of the features that have been added since the draft EIS was released nearly a year ago. The sand filter is unnecessary and will waste the estimated construction cost of $18.2 million and annual operating costs approaching $1 million. The draft EIS states, "on the basis of all available information, it appears highly unlikely that downstream habitats would suffer substantially as a result of biota transfer caused by the Devils Lake outlet project." To propose spending $18 million dollars so this sentence can be changed to, "...it appears extremely unlikely...", which is about all the sand filter would accomplish, is irresponsible.

The added mitigation features for aquatic impacts (additional riprap protection and channel cutoffs) appear to be an effort to address any potential future problem no matter how slight the risk instead of the more realistic adaptive management plan that was presented in the draft EIS. At first glance it may appear appropriate to address any future risk, but the difficulty in forecasting potential future erosion sites means that this approach may result in many sites being protected unnecessarily. It would be more logical to protect future erosion when and if it should occur. We are uncertain what benefits the channel cutoffs would provide and how they would provide these benefits. However, they would cause some negative impacts including severing land parcels and increasing the risk of bank erosion as shortening the channel length would increase the velocity. We are concerned that these unnecessary mitigation measures would in turn require additional mitigation measures and once you start on that type of logic there is no end in sight.

The added safety measures on the Sheyenne River low head dams may be necessary, but at this time not enough information has been provided to make that determination. Before the State could support additional estimated costs of $1.8 million for this effort, the location of the dams to be modified, the flows at which the roller occurs, the purpose and condition of the dam, and a comparison of the cost and benefits of protecting versus removing the dams will have to be reviewed.

The costs of the Dry Lake Diversion feature appear to be high. It seems incredible that a feature that has an estimated construction cost of $2.5 million will require an estimated $2.9 million for cultural resource surveys. The information provided at the December 9 meeting also indicates that $1 million will be required for Fish and Wildlife mitigation for the Dry Lake Diversion and states, "Includes costs for modifications at Lake Alice to maintain management capabilities and payments to FWS for increased operation costs on the refuge." The Lake Alice refuge is almost entirely inundated by Devils Lake, it would seem an outlet and a Dry Lake diversion would provide management capabilities that the refuge does not currently have. Nor do we understand why the diversion would increase the operation cost on the refuge.

The state has and will continue to support reducing the sulfate constraint from 450 to 300 mg/L and raising the drawdown elevation from 1441.6 to 1443.0 as these modifications do improve the overall project.

In conclusion, while the State supports the Corps' efforts to construct an outlet from Devils Lake to alleviate the flooding around the lake, it is difficult, if not impossible, for the state to support a project that includes unnecessary and expensive additions that are designed to address remote "what if" risks.

10 LOCAL COOPERATION REQUIREMENTS

The project sponsor for a flood damage reduction project at Devils Lake, North Dakota, would be the North Dakota State Water Commission (hereinafter referred to as NDSWC). The NDSWC would be expected to enter into subsponsorship agreements with benefited entities for financial support and future operation and maintenance responsibilities.

The division of planning, implementation, and operation responsibilities, including local cooperation requirements, institutional requirements, and other non-Federal responsibilities, will be further coordinated as the Project Cooperation Agreement (PCA) and the Project Management Plan (PMP) are formalized. However, the non-Federal sponsor is fully aware of the local requirements associated with implementing a Federal flood damage reduction project.

The Water Resources Development Act of 1996 establishes the cost-sharing requirements for this project; the non-Federal share is a minimum of 35 percent and a maximum of 50 percent for implementation costs associated with flood damage reduction (limited to the Section 902 funding limitations).

The Project Cooperation Agreement (PCA) would include requirements that the non-Federal sponsor comply with requirements of Section 402 of the Water Resources Development Act of 1986, which requires the Non-Federal interest to implement a flood management plan. Whether the sponsor is to maintain the level of protection that is provided by the project to include a moratorium on any new drainage permits in the upper basin will be determined during development of the PCA.

The local sponsor will be responsible for operation and maintenance activities after the initial installation. Also, the local sponsor would be expected to continue any required monitoring procedures and implementation of any identified mitigation needs beginning after 10 years of outlet operation. Protection of additional erosion sites and cultural resource sites would be to the same degree as conducted for the initial construction and operation of the project.

It is recommended that if any of the alternatives discussed in this report are authorized, subject to the non-Federal sponsor agreeing to comply with all applicable Federal laws and policies, the following requirements should be included:

(1) Provide a minimum of 35 percent, but not to exceed 50 percent, of total project costs as further specified below:

(a) Provide, during construction, funds needed to cover the non-Federal share (35 percent) of design costs;

(b) Provide, during construction, a cash contribution equal to 5 percent of total project costs;

(c) Provide all lands, easements, and rights-of-way, including suitable borrow and dredged or excavated material disposal areas, and perform or assure the performance of all relocations determined by the Government to be necessary for the construction, operation, and maintenance of the project;

(d) Provide or pay to the Government the cost of providing all retaining dikes, waste weirs, bulkheads, and embankments, including all monitoring features and stilling basins, that may be required at any dredged or excavated material disposal areas required for the construction, operation, and maintenance of the project; and

(e) Provide, during construction, any additional costs as necessary to make its total contribution equal to 35 percent of total project costs.

(2) For so long as the project remains authorized, operate, maintain, repair, replace, and rehabilitate the completed project, or functional portion of the project, at no cost to the Government, in accordance with applicable Federal and State laws and any specific directions prescribed by the Government.

(3) Grant the Government a right to enter, at reasonable times and in a reasonable manner, upon land which the local sponsor owns or controls for access to the project for the purpose of inspection, and if necessary, for the purpose of completing, operating, maintaining, repairing, replacing, or rehabilitating the project.

(4) Assume responsibility for operating, maintaining, replacing, and rehabilitating the project or completed functional portions of the project, including mitigation features without cost to the Government, in a manner compatible with the project's authorized purpose and in accordance with applicable Federal and State laws and specific directions prescribed by the Government in the Operation and Maintenance manual and any subsequent amendments thereto.

(5) Support the Government's obligation to comply with Section 221 of the Flood Control Act of 1970, Public Law 91-611, as amended, and Section 103 of the Water Resources Development Act of 1986, Public Law 99-662, as amended, which provides that the Secretary of the Army shall not commence construction of any water resources project, or separable element thereof, until the non-Federal sponsor has entered into a written agreement to furnish its required cooperation for the project or separable element.

(6) Hold and save the Government free from all damages arising from the construction, operation, maintenance, repair, replacement, and rehabilitation of the project and any project-related betterments, except for damages due to the fault or negligence of the Government or its contractors.

(7) Keep and maintain books, records, documents, and other evidence pertaining to costs and expenses incurred pursuant to the project to the extent and in such detail as will properly reflect total project costs.

(8) Perform, or cause to be performed, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 USC 9601-9675, that may exist in, on, or under lands, easements or rights-of-way necessary for the construction, operation, and maintenance of the project; except that the non-Federal sponsor shall not perform such investigations on lands, easements, or rights-of-way that the Government determines to be subject to the navigation servitude without prior specific written direction by the Government.

(9) Assume complete financial responsibility for all necessary cleanup and response costs of any CERCLA-regulated materials located in, on, or under lands, easements, or rights-of-way that the Government determines necessary for the construction, operation, or maintenance of the project.

(10) As between the Federal Government and the non-Federal sponsor, the non-Federal sponsor shall be considered the operator of the project for the purpose of CERCLA liability. To the maximum extent practicable, operate, maintain, repair, replace, and rehabilitate the project in a manner that will not cause liability to arise under CERCLA.

(11) Prevent future encroachments on project lands, easements, and rights-of-way that might interfere with proper functioning of the project.

(12) Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended by title IV of the Surface Transportation and Uniform Relocation Assistance Act of 1987 (Public Law 100-17), and the Uniform Regulations contained in 49 CFR part 24, in acquiring lands, easements, and rights-of-way, and performing relocations for construction, operation, and maintenance of the project, and inform all affected persons of applicable benefits, policies, and procedures in connection with said act.

(13) Comply with all applicable Federal and State laws and regulations, including Section 601 of the Civil Rights Act of 1964, Public Law 88-352, and Department of Defense Directive 5500.11 issued pursuant thereto, as well as Army Regulation 600-7, entitled "Nondiscrimination on the Basis of Handicap in Programs and Activities Assisted or Conducted by the Department of the Army," and Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12), requiring non-Federal preparation and implementation of floodplain management plans.

(14) Provide the non-Federal share of the total cultural resource preservation mitigation and data recovery costs attributable to structural flood control that are in excess of 1 percent of the total amount authorized to be appropriated for structural flood control.

(15) Participate in and comply with applicable Federal floodplain management and flood insurance programs.

(16) Do not use Federal funds to meet the non-Federal sponsor's share of total project costs unless the Federal granting agency verifies in writing that the expenditure of such funds is authorized by statute.

(17) Inform affected interests, at least annually, regarding the limitations of the protection afforded by the project.

(18) Prescribe and enforce regulations to prevent obstruction of or encroachment on the project that would reduce the level of protection it affords or that would hinder operation or maintenance of the project.

11 COST SHARING

The project sponsor is responsible for contributing a minimum of 35 percent of the total project cost, and no greater than 50 percent. With a total project cost of the selected outlet plan of $186,500,000[1], the project sponsor is responsible for contributing a minimum of $64,850,000. The estimated costs for Lands, Easements, Rights-of-Way, Relocations, and Dredged material disposal areas (LERRD's) for the project is $10,664,000, which includes $9,508,000 for real estate costs and $1,156,000 for relocations. The project sponsor must contribute a minimum of 5 percent cash toward the project, plus an additional cash contribution to reach the minimum 35 percent of total project costs. Assuming LERRD costs of $10,664,000, the resulting minimum cash contribution would be $54,186,000.

The following costs are considered LERRD's: all lands acquired in fee or easement, including all associated administrative costs; relocations, all engineering, design, supervision and administration costs associated with these items; and all administrative costs incurred by the Corps associated with the sponsor's acquisition of all lands, easements, and rights-of-way.

The project sponsor will pay in the first year of construction their proportionate share of the total of the planning, engineering and design (PED) costs and the first year construction costs. The estimated annual Operation and Maintenance, Rehabilitation, Repair, and Replacement (OMRR&R) costs are based on a wet future scenario and include operation and maintenance of the outlet ($1,763,000), operation of the sand filtration system ($950,000), operation and maintenance of miscellaneous project features ($200,000), and additional downstream water treatment costs ($50,600).

Cost Sharing Schedule

($000's)

First Costs				Annual Costs
Total Project Cost	Non-Federal Costs		Federal	
	LERRD's	Cash		OMRR&R (non-federal)
$186,500	$10,664	$54,186	$121,650	$2963.6 (1)

(1) Operating costs will vary depending on future climate.

[1] *The estimated project cost for the preliminarily selected outlet plan used throughout the evaluation of alternatives has been $97.7 million. More detailed design has been completed and the estimated cost has increased to $186.5 million. In consideration of the economic feasibility of this alternative, the benefit-cost ratios have changed from 0.37 and 2.51, respectively for the stochastic and wet future to 0.19 and 1.54 with the increased costs. The cost increases would have similar effects on other alternatives and will not affect results of the alternative evaluation process. As shown in Table 5-22, the fully funded cost, which includes expected inflation, is $208,230,000. The non-Federal portion of this amount is $72,390,000.*

12 CONCLUSIONS

The Corps prepared the Integrated Planning Report and Environmental Impact Statement for Devils Lake, North Dakota, to document study methodology, alternatives evaluated, and findings**.** By the Energy and Water Development Appropriations Act, 2003, Division D of Public Law 108-7, the Congress authorized and directed the Corps to construct an emergency outlet from Devils Lake to the Sheyenne River, subject to several conditions.

One condition is the Secretary of State providing assurances that the project will not violate the Boundary Waters Treaty of 1909. In addition, Public Law 108-7 removes the traditional requirements regarding economic justification and only requires that the justification for the Devils Lake emergency outlet be fully described, including the analysis of the benefits and costs. The Corps of Engineers traditionally recommends plans that show the greatest expected net benefits, where benefits exceed costs based on the probability of events. As a standard process under the Principles and Guidelines, this is referred to as the National Economic Development, or NED, plan. A stochastic approach was used to determine whether any of the outlet plans met that criterion.

Stochastic modeling assumed climate stationarity. Because of the uncertainty of and the differing scientific opinions regarding future climatic conditions in the Devils Lake basin, a scenario-based analysis was also performed. In situations of uncertainty, the Principles and Guidelines allow for development of alternative future conditions, or scenarios. This scenario-based analysis was used to specifically address potential solutions to the problems in the basin if the recent wet conditions continue.

Given the uncertainty and controversy around the ability to forecast future lake stages, the Corps also considered risk avoidance in its analysis. Instead of relying on the probability analyses, the selection of an alternative could be viewed as an insurance policy, rather than an investment. The rapid rise in lake elevation from 1993 to 1999, which was not consistent with the modeled probability analysis, illustrated the argument for risk aversion as a basis for alternative evaluation.

On the basis of studies and coordination, the Pelican Lake 300 cfs outlet alternative has been identified as the preferred alternative to meet the purpose and objectives of the project. The outlet discharge evaluated for impacts is constrained such that sulfate levels and flow rates in the Sheyenne River do not exceed 300 mg/l or 600 cfs, respectively, at the insertion point. These constraints were developed to minimize downstream water quality impacts and flooding, while still providing effective reduction in lake stage. While an operating framework has been developed for the outlet, the Corps continues to explore operational options that will further reduce downstream water quality impacts while minimizing lake stage increases. As a result, the operating plan may be further refined. The Pelican Lake Outlet alternative is shown to be cost-effective under the wet scenario. Many infrastructure features would be required even with construction and operation of an outlet.

The current mitigation proposal acknowledges potential effects on aquatic and riparian resources but assumes that if the ecological integrity of the Sheyenne River and the riparian corridor is maintained, the river's natural state will recover upon cessation of project operation. Because of the inability to define how the outlet would actually be operated, the limited precision of modeling techniques, and the lack of detailed system-wide information regarding terrestrial and aquatic species and habitat distribution, many of the operational impacts can not be quantified. The conclusions regarding potential impacts are based on the best available information. However, the eventual occurrence of any impacts is highly dependent on the eventual length of operation and the final operational constraints. Therefore, there is a high level of uncertainty with respect to the actual occurrence, location, and timing of potential effects. Mitigation measures are proposed to help ensure the recovery of the system after the outlet has ceased operation. Mitigation features include design features to avoid or minimize adverse effects, the acquisition and management of approximately 6,000 acres of riparian habitat, erosion protection to minimize the effects of turbidity and sedimentation, high flow bypass channels to maintain critical aquatic habitat, and a sand filter to minimize the risk of biota transfer. The mitigation proposal adopts an adaptive management approach by including extensive monitoring to: (1) establish baseline conditions on the Sheyenne River prior to outlet operation, (2) document expected level of effects associated with outlet operation, and (3) ensure that mitigation features were sufficient to allow recovery of resources along the Sheyenne River once operation of the outlet has ceased. Monitoring activities to establish baseline conditions and monitoring costs for the first 10 years of operation are proposed as first costs.

An outlet is not economically justified using the stochastic analysis (i.e., a probability-based methodology). However, there is uncertainty in forecasting lake levels as well as the risk of major impacts in the event of an overflow. As noted previously, in Public Law 108-7, the Congress removed the traditional requirements regarding economic justification and provided instead that the justification for the emergency outlet shall be full described, including the analysis of the benefits and costs.

An outlet would drain water from the lake, thereby slowing or eliminating its rise or hastening its fall. As a result, there would also be increased concentrations of pollutants in the lake in the short term because the outlet would drain the lake's higher quality water. However, water quality would be further decreased if the same lake level reduction were achieved only through evaporation. This may have an impact on aquatic resources in the lake, possibly resulting in decline or loss sooner than under the future without-project conditions. The extent of how much an outlet would lower peak lake levels depends on the future climatic conditions. Lower lake levels would accelerate vegetation growth in exposed areas that had been inundated. An outlet would have adverse effects in downstream receiving waters, including degraded water quality, increased erosion, increased sedimentation, reduced aquatic habitat value, higher river stages, minimal increased overbank flooding, extended duration of inundation, impeded river access, loss of aquatic resources, loss of riparian habitat, effects on agricultural uses, effects on water treatment facilities, social effects, cultural resource losses, effects on irrigation, and effects on Tribal resources.

Continued infrastructure protection would result in protection of the major features in the basin such as the City of Devils Lake, important facilities, and major roads. The construction of infrastructure features would not alleviate the disruption of social services, transportation systems, and loss of features that are not protected. Environmental effects would be localized and include increased sedimentation and turbidity, effects on aquatic resources, losses due to acquisition of borrow material, and disruption of social services. Infrastructure protection is economically justified because it is constructed incrementally as it is needed. Continued infrastructure protection, the most likely future without a project, is economically justified using either the stochastic, wet future scenario, or 1455 maximum lake level scenario approaches.

Upper basin storage/watershed management consists of storing water in depressions in the upper basin. This alternative would result in the conversion of agricultural lands to intermittent or permanent wetland storage sites. There would be significant effects on current land uses, loss of agricultural lands, and benefits to wetland and wildlife resources. On the basis of the stochastic analysis, upper basin storage/watershed management is not economically justified, while net benefits result under the wet future scenario. Further analysis to optimize the most cost-effective plan for upper basin storage/watershed management as a complementary project feature, along with further evaluation of associated social, economic, and environmental effects, appears warranted.

The Federal environmental review process for this project consists of a discussion of the plan selection process, potential impacts of alternatives, potential mitigation features for the direct impacts of construction, and future mitigation plans and studies. Further coordination is needed to determine if the preferred alternative is in compliance with various environmental standards such as the Boundary Waters Treaty of 1909 and the Clean Water Act. Additional data acquisition and monitoring will be required to further define and evaluate the operational impacts of an outlet. Based on the results of these evaluations, supplemental NEPA documentation will be prepared as required.

13 RECOMMENDATION

Having reviewed and evaluated documents concerning the proposed action and views of other interested agencies and parties raised on the draft IPR/EIS, the Corps of Engineers has identified that the preferred alternative to alleviate flood damage at Devils Lake in North Dakota is the Pelican Lake 300 cfs outlet plan.

The preferred alternative consists of an outlet from Pelican Lake to the Sheyenne River. It would include open channel from Pelican Lake to the pump station located just north of Minnewaukan and a buried pipeline from the pump station to the Sheyenne River, with a total length of about 22 miles. A regulation reservoir would be located at the divide to regulate flows to the Sheyenne River. The plan includes provisions to close Channel A during outlet operation and divert flows from Dry Lake to the intake area of the outlet in Pelican Lake. The outlet operation would be constrained to a 600 cfs channel capacity (maximum outlet flow 300 cfs) and a 300 mg/l sulfate constraint on the Sheyenne River. Other features of the plan include a sand filter to address biota transfer, erosion protection measures along the Sheyenne River, protection of cultural resource sites along the Sheyenne River, construction of by-pass channels to alleviate effects to aquatic resources, compensation of increased water treatment costs for municipal and industrial water users, the acquisition of 6,000 acres of riparian lands along the Sheyenne River for mitigation, and the acquisition of flowage easements. Long-term monitoring and adaptive management is also included to evaluate the effectiveness of the mitigation features and to determine the need for additional mitigation measures.

The estimated cost of this outlet plan is $186.5 million. Cost sharing of these costs is 65 percent Federal and 35 percent Non-Federal. Estimated annual operation and maintenance costs, which are to be borne by the Non-Federal sponsor, are estimated to be almost $3.0 million, with some variance, which is dependent on future climate.

Following the public review of the final IPR/EIS, the Corps will recommend a course of action. If the Pelican Lake 300 cfs outlet plan is selected, other Federal and state agencies would have to take action before the outlet could be constructed and operated.

14 LIST OF PREPARERS

Name	Discipline	Years Experience	Role
Corps of Engineers			
Judy DesHarnais	Deputy District Engineer for Project Management	19	Overall Project / Study Management
Mississippi Valley Division / Headquarters	Management		Study guidance and direction
Dave Loss	Civil Engineer	30	Project Manager; Prepare Report
Robert Anfang	Biologist	28	Prepare EIS; impact evaluation
Randy Devendorf	Biologist	23	Prepare EIS; impact evaluation
Keith LeClaire	Cartographer	10	Geographic Information Specialist
Virginia Gnabasik	Archaeologist	19	Cultural resource evaluation
Jeff McGrath	Economist	23	Economic / Social evaluation
Kevin Bluhm	Economist	16	Public Involvement
Dennis Holme	Physical Scientist	27	Water quality analysis
Daniel Reinartz	Hydraulic Engineer	28	Hydrologic analysis
Tim Yager	Biologist	10	Aquatic habitat analysis
Byron Williams	Cartographer	3	Geographic Information Specialist
Mike Walker	Cartographer	12	Geographic Information Specialist
Robert Engelstad	Hydraulic Engineer	31	Hydrologic analysis; upper basin storage
James Sentz	Environmental Engineer	15	Water quality analysis
Terry Zien	Hydrologic Engineer	14	Hydrologic analysis
Richard Beatty	Biologist	24	Contract specialist
Kent Hokens	Civil Engineer	17	Project engineering / design
Pat Foley	Hydraulic Engineer	29	Geomorphology analysis
Scott Goodfellow	Hydrologic Engineer	19	Geomorphology analysis
Gary Smith	Cost Engineer	26	Cost estimating
Edwin Bankston	Attorney	28	Legal Counsel
Marcia McCloskey	Realty Specialist	17	Real Estate
Mary Muraski	Realty Specialist	25	Real Estate
Michelle Schneider	Hydraulic Engineer	12	Hydraulic Routings
Contractors			
Barr Engineering Company	Contractor		Economic / water users / groundwater analysis; project design
West Consultants	Contractor		Upper basin storage / erosion analysis
Peterson Environmental Consulting	Contractor		Biota transfer / soil salinity / social / mitigation analysis
Earth Tech	Contractor		Public involvement; aquatic analysis; macroinvertebrate studies
106 Group	Contractor		Cultural resource evaluation
Burns and McDonnell	Contractor		Cultural resource evaluation
3001	Contractor		LIDAR contour mapping
Space Imaging	Contractor		Satellite imaging
AsCi Corporation	Contractor		Bioassay
Al Nygard Consulting	Contractor		Tribal liaison
SEH Incorporated	Contractor		ITR Integrated Report/EIS
Other Agencies			
U.S. Geological Survey	Federal Agency		Hydrologic / water quality / groundwater analysis
U.S. Fish and Wildlife Service	Federal Agency		Natural resource evaluation; Coordination Act Report; fishery pathogen analysis
U.S. Environmental Protection Agency	Federal Agency		Watershed management activities; Environmental Justice analysis; cooperating agency
North Dakota State University	Education Institution		Algal analysis
North Dakota State Water Commission	State Agency		Public involvement; project planning; cooperating agency
State of North Dakota, Governor's Staff, and Congressional Delegation	Administrative Staff		Screening of alternatives
Bureau of Reclamation	Federal Agency		Exchange of information; coordination
Bureau of Indian Affairs	Federal Agency		Tribal Coordination; cooperating agency
Engineering Research and Development Center (ERDC)	Corps of Engineers Laboratory		Biota, mercury, water quality, hydrology, visualization analysis
Devils Lake Technical Representatives	Federal, State, local agencies, and interest groups		Provided technical review of products, screening alternatives, and scoping